

IXODID TICKS (ACARI: IXODIDAE) IN URBAN LANDSCAPES (HISTORY OF RESEARCH, COUNTRIES)

I. A. Akimov¹ & I. V. Nebogatkin²

I. I. Schmalhausen Institute of Zoology, National Academy of Sciences of Ukraine, Bogdan Chmielnitsky St, 15, Kyiv, 01601, Ukraine

¹E-mail: iz@izan.kiev.ua

²E-mail: niv_zoo@ua.fm

Akimov, I. A., Nebogatkin, I. V. Ixodid ticks (Acari: Ixodidae) in urban landscapes (history of research, countries). Summary. Publications dedicated to studies of the hard ticks in urban landscapes cover 68 countries and about 800 cities of the world. A detailed bibliography is provided.

Key words: ticks, tick-borne infection, urban landscapes, bibliography.

Акімов, І. А., Небогаткін, І. В. Іксодові кліщі (Acari: Ixodidae) в урбаністичних ландшафтах (історія вивчення, країни). Резюме. Публікації, присвячені вивченню кліщів в урбаністичних ландшафтах, охоплюють 68 країн і біля 800 міст. Наведено детальну бібліографію.

Ключові слова: іксодові кліщі, інфекції які пов'язані з іксодовими кліщами, урбаністичні ландшафти, бібліографія.

Акимов, И. А., Небогаткин, И. В. Иксодовые клещи (Acari: Ixodidae) в урбанистических ландшафтах (история изучения, страны). Резюме. Публикации, посвященные изучению клещей в урбанистических ландшафтах, охватывают 68 стран и около 800 городов мира. Приведена детальная библиография.

Ключевые слова: иксодовые клещи, инфекции, связанные с иксодовыми клещами, урбанистические ландшафты, библиография.

Introduction

Urbanization is gaining momentum almost all over the globe. Current status of knowledge on the subject of ixodids in cities around the world (the urban aspect) remains important. The present study aims compiling a bibliography of research of ixodids under the urban conditions and reviewing the history of these studies.

Material and methods

To achieve these goals, more than 800 publications that focus on ixodid ticks in urban environment were studied. Ixodid systematics is follows from “The hard ticks of the world (Acari: Ixodida: Ixodidae)” (Guglielmone, et al., 2014). In our analysis we used six time periods: 1907–1969, 1970–1979, 1980–1989, 1990–1999, 2000–2009, and 2010–2015.

Results

First reports of hard ticks in cities were incidental, mostly mentioning facts of finds, such as in 1907 (Hunter, Hooker, 1907).

Hooker, Bishopp & Wood (1912) mention *Dermacentor parumapertus marginatus* Neumann, 1901 Banks in Mesa, Arizona, *R. sanguineus* and *Amblyomma americanum* (Linnaeus, 1758) in Corpus Christi, Texas, etc.

Zinsser and Castaneda (1931) from Mexico conducted research in Mexico City, Young and Goff (1939) from the USA mention ixodid ticks in Miami and Florida cities. Cooley & Kohls (1944, 1945) found them in Corpus Christi, Broxton, Lakeland, etc.

Zumpt (1944) and Goethe (1968) reported *R. sanguineus* in German cities, while Anastos includes mentions of ixodids in Asian cities (aside from Asian regions of the USSR) in a monograph on hard ticks of Indonesia (Anastos, 1950).

Olenev & Ohandzhanyan were the first scientists to report ixodid ticks in cities of the former USSR. countries: Novgorod, Russia — in a paper about biological properties

of two ixodid species, *I. ricinus* (Linnaeus, 1758) and *D. reticulatus* (Fabricius, 1794) (Olenev, 1927), and Yerevan, Armenia (Ohandzhanyan, 1948). Siberia is covered in five publications by Karpov (1956, 1959, 1961, 1965) on Tomsk, Russia and in a paper by Vlasenko & Filippova (1961) on Novosibirsk, Russia and a paper by Fedorov (1968) on Omsk, Russia.

This phase incorporates studies of ixodid ticks in the cities of former Czechoslovakia, collected from dogs (Dyk, 1957), European hedgehogs (*Erinaceus europaeus* Linnaeus, 1758) and dormice (Gliridae) (Kozuch et. al.,

1963). In 1965, Černý published first of his studies on ixodid ticks in cities of that country (Černý, 1963).

In 1970, Ryltseva published a report about ixodid ticks in Ufa, Russia.

Research prior to 1989 related to the study of the problems of tick-borne encephalitis. From 1990, studies on the *Borrelia burgdorferi* sensu lato complex (causative agents of Lyme disease) supplemented studies of the tick-borne encephalitis.

According to our data, there are publications on 68 countries and 793 cities on the subject of research of ticks in cities (Table 1). There are countries where ixodids were studied in five time periods or longer (Figure 1).

Table 1. Publications on the subject of research of ticks in urban landscapes

Country	Authors		
Algeria	Mouffok et al., 2006	Brazil	Cardoso et al., 2008
Argentina	Cicuttin et al., 2013	Brazil	Costa et al., 2007
Argentina	Cicuttin et al., 2014	Brazil	Costa et al., 2002
Argentina	Cicuttin et al., 2014	Brazil	Costa et al., 2013
Argentina	Guglielmone et al., 1991	Brazil	Costa-Júnior et al., 2013
Argentina	Guglielmone et al., 2006	Brazil	da Costa et al., 2015
Armenia	Ohanjanyan, 1948	Brazil	da Silva et al., 2011
Austria	Derdáková et al., 2014	Brazil	Dantas-Torres et al., 2004
Austria	Duscher et al., 2013	Brazil	Dantas-Torres et al., 2006
Austria	Glatz et al., 2013	Brazil	Dantas-Torres, 2009
Austria	Leschnik et al., 2012	Brazil	Dantas-Torres, Otranto, 2014
Austria	Prosl, Kutzer, 1986	Brazil	de Almeida et al., 2013
Austria	Troger et al., 1976	Brazil	de Lima et al., 1995
Belgium	Claerebout et al., 2013	Brazil	Estrada et al., 2006
Belgium	Li et al., 2012	Brazil	Garcia et al., 2013
Belgium	Obsomer et al., 2013	Brazil	Gratz, 1999
Belorussia	Alekseev et al., 2005	Brazil	Klimpel et al., 2010
Belorussia	Efremov, Jankovic, 2008	Brazil	Krawczak et al., 2014
Belorussia	Efremov, Jankovic, 2009	Brazil	Labruna et al., 2007
Belorussia	Fedorova, 2012a	Brazil	Labruna et al., 2002
Belorussia	Fedorova, 2012b	Brazil	Martins et al., 2009
Belorussia	Fedorova, 2013a	Brazil	Martins et al., 2012
Belorussia	Fedorova, 2013b	Brazil	Matias et al., 2015
Belorussia	Rytikov, 2010	Brazil	Melo et al., 2011
Belorussia	Sawickiy et al., 2007	Brazil	Mendes-de-Almeida et al., 2011
Belorussia	Sawickiy et al., 2008	Brazil	Pascoal et al., 2013
Belorussia	Stegny, Mishaeva, 2012	Brazil	Paz et al., 2010
Belorussia	Zaharchuk 2005	Brazil	Pinheiro et al., 2014
Bolivia	Tomassone et al., 2010	Brazil	Queirogas et al., 2012
Bosnia and Herzegovina	Krčmar et al., 2014	Brazil	Ramos et al., 2010
Bosnia and Herzegovina	Omeragić et al., 2003	Brazil	Reis et al., 2013
Bosnia and Herzegovina	Omeragic et al., 2011	Brazil	Sá et al., 2007
Brazil	Aguiar et al., 2007	Brazil	Santos et al., 2013
Brazil	Aguiar et al., 2008	Brazil	Serra-Freire et al., 2010
Brazil	Almeida et al., 2011	Brazil	Serra-Freire, Borsoi, 2009
Brazil	Araujo et al., 2015	Brazil	Silveira et al., 2009
Brazil	Arzua et al., 2003	Brazil	Soares et al., 2006
Brazil	Arzua, Barros-Battesti 1999	Brazil	Souza et al., 2010
Brazil	Campos, Costa 2014	Brazil	Spolidorio et al., 2013

Brazil	Szabo et al., 2001	Czech Republic	Černý, Rosický, 1979
Brazil	Szabó et al., 2001	Czech Republic	Daniel et al., 1986
Brazil	Szabó et al., 2005	Czech Republic	Daniel, Černý, 1986
Brazil	Szabó et al., 2010	Czech Republic	Daniel, Černý, 1990
Brazil	Szabó et al., 2010	Czech Republic	Dubská et al., 2009
Brazil	Szabó et al., 2012	Czech Republic	Dyk, 1957
Brazil	Szabó et al., 2013	Czech Republic	Hercík et al., 2007
Brazil	Toledo et al., 2008	Czech Republic	Hubálek et al., 1993
Brazil	Toledo et al., 2011	Czech Republic	Hulinská et al., 2007
Brazil	Toledo et al., 2011	Czech Republic	Kozuch et al., 1963
Brazil	Vieira et al., 2011	Czech Republic	Málková et al., 1984
Brazil	Vieira et al., 2013	Czech Republic	Málková et al., 1979
Canada	Rich, 1971	Czech Republic	Málková et al., 1983
Cape Verde	Götsch et al., 2009	Czech Republic	Nosek, 1982
Chile	Abarca et al., 2013	Czech Republic	Pejchalová et al., 2007
Chile	Alcaíno, 1985	Czech Republic	Plch, Basta, 1999
Chile	Burchard, 1985	Czech Republic	Pokorný, 1990
Chile	González-Acuña et al., 2003	Czech Republic	Pokorný, Zahradková, 1990
Chile	González-Acuña et al., 2006	Czech Republic	Rosický, 1977
Chile	López et al., 2012	Czech Republic	Rosický, 1978a
Chile	Muñoz, Casanueva, 2001	Czech Republic	Rosický, 1978b
Chile	Tagle, 1976	Czech Republic	Rosický, Daniel, 1978
China	Cao et al., 2000	Czech Republic	Síroký et al., 2011
China	Chen et al., 2014	Czech Republic	Vencliková et al., 2014a
China	Ding et al., 2014	Czech Republic	Vencliková et al., 2014b
China	El-Mahallawy et al., 2015	Czech Republic	Venclikova et al., 2015
China	Fu et al., 2012	Czech Republic	Žákovská et al., 2007
China	Gong et al., 2013	Czech Republic	Žákovská et al., 2008
China	Jiang et al., 2011	Czech Republic	Žákovská et al., 2011
China	Jin et al., 2009	Czech Republic	Žákovská et al., 2013
China	Liu et al., 2012	Czech Republic	Žákovská, 2000a
China	Liu et al., 2013	Czech Republic	Žákovská, 2000b
China	Takada et al., 2001	Czech Republic	Zeman, Benes, 2014
China	Tsai et al., 2012	Ecuador	McCown et al., 2011
China	Wan et al., 1998	Finland	Hackman et al., 1977
China	Wang et al., 2013	Finland	Han et al., 2001
China	Wu et al., 2008	Finland	Junttila et al., 1999
China	Wu et al., 2013	Finland	Makinen et al., 2003
China	Xiaa et al., 2008	Finland	Mäkinen et al., 2003
China	Xie et al., 2009	Finland	Pérez Vera et al., 2014
China	Zhang et al., 1996	Finland	Pettersson et al., 2014
China	Zhang et al., 2012a	Finland	Siukkola, 2014
China	Zhang et al., 2012b	France	Beugnet et al., 2011
China	Zhang et al., 2014	France	Criado-Fornelio et al., 2003
Colombia	McCown et al., 2014	France	Gilot et al., 1973
Colombia	Vargas-Hernandez et al., 2012	France	Gilot et al., 1977
Costa Rica	Hun et al., 2011	France	Gilot et al., 1992
Country	Authors	France	Gilot, Pautou, 1982
Croatia	Krčmaret al., 2014	France	Marié et al., 2012
Czech Republic	Bašta et al., 1999	France	Martinod et al., 1985
Czech Republic	Černý, 1963	France	Pichot et al., 1997
Czech Republic	Černý, 1975	France	Quessada et al., 2003
Czech Republic	Černý, 1985	France	Raoult et al., 1993
Czech Republic	Černý, 1989	France	Renvoisé et al., 2012
Czech Republic	Černý, Daniel, 1980	Germany	Bauch, 1993
Czech Republic	Černý, Daniel, 1985	Germany	Baumgarten et al., 1999
Czech Republic	Černý, Daniel, 1986	Germany	Beichel et al., 1996

Germany	Beugnet et al., 2014	Germany	Thamm et al., 2009
Germany	Dautel et al., 2006	Germany	von Loewenich et al., 2003
Germany	Dautel et al., 2008	Germany	Zumt, 1944
Germany	Fingerle et al., 1999	Ghana	Clarke et al., 2014
Germany	Glatz et al., 2014	Greece	Papadopoulos et al., 1996
Germany	Glatz et al., 2014	Greece	Papazahariadou et al., 2003
Germany	Goth, 1999	Hungary	Farkas, Földvári, 2001
Germany	Goth, Hame, 1973	Hungary	Földvári et al., 2005
Germany	Gothe et al., 1968	Hungary	Földvári et al., 2007
Germany	Gothe et al., 1977	Hungary	Földvári et al., 2011
Germany	Gothe, Wegerdt, 1991	Hungary	Földvári et al., 2014
Germany	Hartelt et al., 2004	Hungary	Földvári, Farkas, 2005
Germany	Heile et al., 2006	Hungary	Hornok et al., 2013
Germany	Heile et al., 2007	Hungary	Hornok et al., 2014
Germany	Hoffmann, 1981	Hungary	Hornok, Farkas, 2005
Germany	Janecek et al., 2012	Hungary	Janisch, 1986
Germany	Kahl et al., 1992	Hungary	Schein et al., 1979
Germany	Kahl et al., 1989	India	Abd Rani et al., 2011
Germany	Kahl, Radda, 1988	India	Bhadesiya et al., 2014
Germany	Liebisch et al., 1984	India	Yoak et al., 2014
Germany	Liebisch et al., 1985	Indonesia	Anastos, 1950
Germany	Maetzel et al., 2005	Iran	Gorgani-Firouzjaee et al., 2013
Germany	Matuschka et al., 1990	Iran	Hajipour et al., 2015
Germany	Matuschka et al., 1996	Iran	Kia et al., 2009
Germany	Matuschka et al., 1997	Iran	Zakkyeh et al., 2012
Germany	Matuschka, Spielman, 1992	Ireland	Gray et al., 1992
Germany	May et al., 2015	Ireland	Gray et al., 1999
Germany	May, Strube, 2014	Israel	Mumcuoglu et al., 1993
Germany	Obiegala et al., 2015	Israel	Oren et al., 2005
Germany	Ott, Schönberg, 1989	Israel	Salant et al., 2014
Germany	Overzier et al., 2013	Israel	Uspensky et al., 1997
Germany	Overzier et al., 2013	Israel	Uspensky et al., 2009
Germany	Plate, 1993	Israel	Uspensky, Ioffe-Uspensky, 2002
Germany	Rehse-Kupper et al., 1979	Israel	Wilamowski et al., 1999
Germany	Richter et al., 2011	Italy	Aureli et al., 2012
Germany	Richter et al., 2013	Italy	Cassini et al., 2009
Germany	Schicht et al., 2011	Italy	Ciceroni et al., 2003
Germany	Schicht et al., 2012	Italy	Corrain et al., 2012
Germany	Schöffel et al., 1991	Italy	Di Luca et al., 2013
Germany	Schönberg et al., 1988	Italy	Dutto et al., 2012
Germany	Schorn et al., 2011a	Italy	Mancini et al., 2014
Germany	Schorn et al., 2011b	Italy	Otranto et al., 2014
Germany	Schorn et al., 2011c	Italy	Siater et al., 2008
Germany	Silaghi et al., 2008a	Italy	Stella, Sobrero, 1978
Germany	Silaghi et al., 2008b	Italy	Toma et al., 2015
Germany	Silaghi et al., 2012a	Italy	Tringali et al., 1986
Germany	Silaghi et al., 2012b	Japan	Andoh et al., 2013
Germany	Silaghi et al., 2012c	Japan	Inayoshi et al., 2004
Germany	Simser et al., 2002	Japan	Inokuma et al., 1998
Germany	Sixl et al., 1981	Japan	Iwakami et al., 2014
Germany	Skuballa et al., 2007	Japan	Kawahara et al., 1999
Germany	Skuballa et al., 2010	Japan	Maeoka et al., 1990
Germany	Spielman, 1994	Japan	Ohashi et al., 2005
Germany	Strube et al., 2010	Japan	Sakai et al., 1976
Germany	Strube et al., 2011	Japan	Shimada et al., 2003
Germany	Tappe et al., 2014	Japan	Someya et al., 2015
Germany	Tappe, Strube, 2013	Japan	Yoshii et al., 2015

Korea	Kim et al., 2006	Poland	Buczek, Bartosik, 2011
Korea	Kim et al., 2011	Poland	Bukowska et al., 2003
Korea	Kim et al., 2014	Poland	Chmielewska-Badora et al., 1998
Korea	Lim et al., 2010	Poland	Chmielewski et al., 2011
Kyrgyzstan	Fedorova, 2005a	Poland	Cieniuch et al., 2009
Kyrgyzstan	Fedorova, 2005b	Poland	Cisak et al., 2002
Lithuania	Alekseev et al., 2008	Poland	Cisak et al., 2005
Lithuania	Moteiunas et al., 1990	Poland	Cisak et al., 2006
Lithuania	Radzijeuskaja et al., 2008	Poland	Cisak et al., 2008
Lithuania	Žygutienė et al., 2008	Poland	Drelich et al., 2014
Luxembourg	Reye et al., 2010	Poland	Dziemian et al., 2010
Malaysia	Kernif et al., 2012	Poland	Dziemian et al., 2014
Malaysia	Paramasvaran et al., 2009	Poland	Dziemian et al., 2015
Mexico	Cruz-Vazquez, Garcia-Vazquez, 1999	Poland	Grzeszczuk et al., 2004
Mexico	Gaxiola et al., 1997	Poland	Haitlinger, 1986
Mexico	Rodriguez-Vivas et al., 2005	Poland	Hajdul et al., 2006
Mexico	Tinoco-Gracia et al., 2007a	Poland	Karbowiak et al., 2004
Mexico	Tinoco-Gracia et al., 2007b	Poland	Karbowiak, Siuda, 2001
Mexico	Tinoco-Gracia et al., 2009	Poland	Kiewra et al., 2014
Mexico	Zinsser, Castaneda, 1931	Poland	Kiewra et al., 2014a
Moldova	Chicu et al., 2002	Poland	Kiewra et al., 2014b
Moldova	Koči et al., 2007	Poland	Kiewra et al., 2007
Moldova	Movila et al., 2009	Poland	Kiewra, Lonc, 2004
Moldova	Uspenschi et al., 2003	Poland	Komon, Sytykiewicz, 2007
Moldova	Uspenskaya et al., 1971	Poland	Kosik-Bogacka et al., 2004
Moldova	Uspenskaya et al., 2002	Poland	Krämer et al., 2014
Mozambique	Neves et al., 2004	Poland	Król et al., 2015
Namibia	Matthea et al., 2010	Poland	Kubiak et al., 2004
Netherlands	Hovius et al., 1998	Poland	Kubiak, Dziekońska-Rynko, 2006
Netherlands	Krawczyk et al., 2015	Poland	Lonc et al., 2001
Netherlands	Matjila et al., 2005	Poland	Lonc et al., 2011
Netherlands	Nijhof et al., 2007	Poland	Michalik et al., 2003
Netherlands	Sprong et al., 2012	Poland	Michalik, Rejmenciak, 1998
Netherlands	Wielinga et al., 2006	Poland	Nadżamová et al., 2000
Nigeria	Eyo et al., 2014	Poland	Nowosad et al., 1999a
Nigeria	Okoli et al., 2006	Poland	Nowosad et al., 1999b
Nigeria	Ugbomoiko et al., 2008	Poland	Pet'ko et al., 1997
Nigeria	Ugochukwu, Nnadozie, 1985	Poland	Pet'ko et al., 2001
Norway	Øines et al., 2012	Poland	Podsiadly et al., 2007
Pakistan	Iqbal et al., 2013	Poland	Podsiadly et al., 2009
Pakistan	ul-Hasan et al., 2012	Poland	Scotarczak, Cichocka, 2001
Panama	Bermúdez et al., 2009	Poland	Siński et al., 1994
Panama	Bermúdez et al., 2010	Poland	Siński, Rijpkema, 1997
Panama	Bermúdez et al., 2011	Poland	Siuda et al., 1992
Panama	Bermúdez et al., 2012	Poland	Skotarczak et al., 1999
Panama	Bermúdez, Miranda, 2011	Poland	Skotarczak, Cichocka, 2001
Peru	Clifford et al., 1980	Poland	Skotarczak, Rymaszewska, 2001
Peru	Diniz et al., 2013	Poland	Skotarczak, Wodecka, 2000
Poland	Bartosik et al., 2008	Poland	Skotarczak, Wodecka, 2002
Poland	Bartosik et al., 2011	Poland	Sroka et al., 2009
Poland	Biaduń et al., 2007a	Poland	Stańczak et al., 2004
Poland	Biaduń et al., 2007b	Poland	Stańczak et al., 2015
Poland	Biaduń et al., 2008	Poland	Stefanoff et al., 2013
Poland	Biaduń et al., 2011	Poland	Supergan et al., 2008
Poland	Biernat et al., 2014	Poland	Supergan, Karbowiak, 2009
Poland	Buczek et al., 2014	Poland	Sytykiewicz et al., 2012a
Poland	Buczek, 1991	Poland	Sytykiewicz et al., 2012b

Poland	Sytykiewicz et al., 2015	Russia	Boiko et al., 2010
Poland	Wegner et al., 1997	Russia	Bolshakov et al., 2001
Poland	Welc-Falęciak et al., 2014	Russia	Borgoyakov et al., 2010
Poland	Wodecka et al., 2014	Russia	Borgoyakov et al., 2012
Poland	Wójcik-Fatla et al., 2006	Russia	Bugmyrin et al., 2008
Poland	Wójcik-Fatla et al., 2013	Russia	Chausov et al., 2009
Poland	Zajac et al., 2013	Russia	Chausov et al., 2009
Poland	Zygner et al., 2008	Russia	Chausov et al., 2010a
Poland	Zygner et al., 2009	Russia	Chausov et al., 2010b
Portugal	Cardoso et al., 2010	Russia	Chernousova, Tolkachev, 2009
Portugal	Cardoso et al., 2012	Russia	Chudinov et al., 1971
Portugal	de Sousa et al., 2007	Russia	Danchinova et al., 2012
Portugal	Maia et al., 2014	Russia	Denisov, 2009
Portugal	Simões et al., 2011	Russia	Denisov, 2010
Puerto Rico	McCown et al., 2013	Russia	Domanovo et al., 2005
Review	Dantas-Torres 2013	Russia	Dvortsova et al., 2015
Review	Dantas-Torres, 2010	Russia	Ermakov et al., 2012
Review	Dautel, Kahl, 1999	Russia	Ermolova et al., 2015
Review	Estrada-Peña, Jongejan, 1999	Russia	Fedorov et al., 1999
Review	Granstriim, 1997	Russia	Fedorov, 1968
Review	Gray 2013	Russia	Gaponov et al., 2008
Review	Gritsun 2003	Russia	Gaponov et al., 2009
Review	Jongejan, Uilenberg, 2004	Russia	Gaponov et al., 2011
Review	Korenberg 1999	Russia	Gaponov et al., 2013
Review	McLaughlin, 2002	Russia	Gaponov, Trankvilevsky, 2008
Review	Pavlovsky, 1966	Russia	Gasilin et al., 2013
Review	Robinson 2005	Russia	Georgiou et al., 2008
Review	Steere, 1994	Russia	Golubkova et al., 2010
Review	Straube, 2011	Russia	Golubkova et al., 2012
Review	Uspensky, 2008a	Russia	Gordeyko et al., 2014
Review	Uspensky, 2008b	Russia	Guznischeva et al., 2013
Review	Uspensky, 2014a	Russia	Hristianovsky, 2000
Review	Uspensky, 2014b	Russia	Hristianovsky, 2004
Russia	Alekseev et al., 1996	Russia	Hristianovsky, Belimenko, 2008
Russia	Alekseev et al., 2001	Russia	Hristianovsky, Bystrov, 2004
Russia	Alekseev et al., 2003	Russia	Kalyagin et al., 2010
Russia	Alekseev, 1996	Russia	Karpov et al., 1961
Russia	Alekseev, 2006	Russia	Karpov, 1956
Russia	Alekseev, Dubinina, 2003	Russia	Karpov, 1959
Russia	Andaev et al., 2012	Russia	Karpov, 1963
Russia	Antykova et al., 1998	Russia	Karpov, 1965
Russia	Balagula et al., 1999	Russia	Kartashov et al., 2011
Russia	Balagula, Bondarenko, 1998	Russia	Katargina et al., 2012
Russia	Balakhonov et al., 2012	Russia	Kazarina, 2003
Russia	Barkalova et al., 2009	Russia	Kharitononkov et al., 2009
Russia	Belimenko et al., 2011	Russia	Kidov et al., 2013
Russia	Belimenko et al., 2011	Russia	Komolov et al., 2007
Russia	Belimenko, Hristianovsky, 2011	Russia	Kon'kova-Reidman, Zlobin, 2012
Russia	Bogdanova, 2002	Russia	Kondratiev et al., 2001
Russia	Bogdanova, 2003	Russia	Konkova-Rejdman, Zlobin, 2012
Russia	Bogdanova, 2005	Russia	Korenberg et al., 2010
Russia	Bogdanova, 2006	Russia	Korenberg, 1983
Russia	Bogdanova, 2007	Russia	Korotkov et al., 2008
Russia	Bogdanova, 2008	Russia	Kosheleva et al., 2002
Russia	Bogdanova, 2008	Russia	Koshkina et al., 2014
Russia	Bogomazova et al., 2014	Russia	Kovaleva et al., 1982
Russia	Boiko et al., 2007	Russia	Kozhevnikova et al., 2007

Russia	Kutrkyn, 2009	Russia	Rubtsova et al., 2013
Russia	Lopatina et al., 1998	Russia	Ruzhnikov et al., 2012
Russia	Lutsuk et al., 1999	Russia	Ryabchenko et al., 2004
Russia	Lutsuk et al., 2002	Russia	Ryabchenko, Beklemishev, 2005a
Russia	Lutsuk et al., 2007	Russia	Ryabchenko, Beklemishev, 2005b
Russia	Lviv et al., 2003	Russia	Ryabchenko, Mamaev, 2007
Russia	Lyamina, 2012	Russia	Ryltseva, 1970
Russia	Lyapunov et al., 2011	Russia	Saifullin et al., 2011
Russia	Lykov et al., 1971	Russia	Sapegina et al., 1985
Russia	Lyubeznova et al., 2012	Russia	Shadrina et al., 2011
Russia	Malkova, Rubtsova 2007	Russia	Shevkoplyas et al., 2004
Russia	Malkova, Rubtsova 2010	Russia	Shevkoplyas, 2006
Russia	Malkova, Rubtsova 2013	Russia	Shevkoplyas, 2009
Russia	Masuzawa et al., 2005	Russia	Skachkov et al., 2007
Russia	Masuzawa et al., 2008	Russia	Smyslova et al., 1989
Russia	Mikryukova et al., 2014	Russia	Stekol'nikov et al., 2012
Russia	Moskvitina et al., 2008	Russia	Stekol'nikov et al., 2013
Russia	Moskvitina et al., 2008	Russia	Temichev et al., 2011
Russia	Moskvitina et al., 2008	Russia	Temichev, 2014
Russia	Moskvitina et al., 2009	Russia	Tkachev et al., 1997
Russia	Moskvitina et al., 2014	Russia	Tohov et al., 2013
Russia	Mzhel'skaya et al., 2014	Russia	Tokhov, 2005
Russia	Nafeev, 2006	Russia	Tretyakov et al., 2009
Russia	Nafeev, 2007	Russia	Tretyakov et al., 2012
Russia	Nafeev, Fefelova, 2008	Russia	Tretyakov, 2010
Russia	Nafeev, Shemyatikhina, 2009	Russia	Tretyakov, 2013
Russia	Nagorny, Levchenko, 2000	Russia	Tyulkina, Volkov, 2012
Russia	Nikitin et al., 2012	Russia	Utenkova et al., 2004
Russia	Nikitin, Antonov, 2005	Russia	Vershynskyy et al., 1988
Russia	Novgorodtseva, 1999	Russia	Veselova, Sokolov, 2002
Russia	Novikova, 2005	Russia	Vlasenko, Filippov, 1961
Russia	Olenev, 1927	Russia	Zabashta et al., 2006
Russia	Orlova et al., 2008	Russia	Zaichenko et al., 2010
Russia	Pankina et al., 2009	Russia	Zaitsev et al., 2000
Russia	Pankina et al., 2013	Russia	Zakharov, 2001
Russia	Postic et al., 1997	Russia	Zlobin, Gorin, 1996
Russia	Rar et al., 2010	SAR	Dreyer et al., 1997
Russia	Romanenko, 1999	SAR	Dreyer et al., 1998
Russia	Romanenko, 2002	SAR	Horak, 1995
Russia	Romanenko, 2004	SAR	Kjemtrup et al., 2006
Russia	Romanenko, 2005	SAR	Lewis et al., 1995
Russia	Romanenko, 2005a	Saudi Arabia	Alzahrani et al., 2010
Russia	Romanenko, 2005b	Saudi Arabia	el-Bahrawy et al., 1993
Russia	Romanenko, 2005c	Scotland	Mavin et al., 2009
Russia	Romanenko, 2006	Serbia	Cakanac et al., 1993
Russia	Romanenko, 2007a	Serbia	Cekanac et al., 2010
Russia	Romanenko, 2007b	Serbia	Dmitrović et al., 1989
Russia	Romanenko, 2009	Serbia	Dmitrović, 1996
Russia	Romanenko, 2011	Serbia	Dmitrović, Popović, 1993
Russia	Romanenko, 2011	Serbia	Lako et al., 1998
Russia	Romanenko, 2012	Serbia	Milutinović et al., 1998
Russia	Romanenko, Chekalkina, 2004a	Serbia	Milutinović et al., 2004
Russia	Romanenko, Chekalkina, 2004b	Serbia	Milutinović et al., 2004
Russia	Romanenko, Kondrat'eva, 2011	Serbia	Milutinović et al., 2006
Russia	Romanenko, Kondrat'eva, 2011	Serbia	Milutinović, 2000
Russia	Romanenko, Leonovich, 2015	Serbia	Milutinović, Petrović, 1993
Russia	Romanenko, Pankova, 2001	Serbia	Milutinović, Radulović, 2002

Serbia	Savić, 2012	Ukraine	Avsyukevych et al., 2011
Slovakia	Kocianova et al., 1999	Ukraine	Bezrukiy et al., 2013
Slovakia	Pangráčová et al., 2013	Ukraine	Biletska et al., 2003
Slovakia	Špitalská et al., 2014	Ukraine	Biletska et al., 2012
Slovakia	Stefančíková et al., 1998	Ukraine	Biletska et al., 2013
Slovakia	Svitáľková et al., 2015	Ukraine	Dnistryan et al., 2013
Slovakia	Vichova et al., 2013	Ukraine	Evstafev et al., 2005
Slovakia	Vichová et al., 2014	Ukraine	Goncharenko et al., 2011
Spain	Antón et al., 2008	Ukraine	Hamel et al., 2013
Spain	Criado-Fornelio et al., 2003	Ukraine	Huschuk, Kostyuk, 2013
Spain	Estrada-Peña et al., 2005	Ukraine	Janko et al., 2011
Spain	Estrada-Peña et al., 2005	Ukraine	Kuznetsov, Bondarev, 2007
Spain	Márquez et al., 2008	Ukraine	Lozynski et al., 2013
Spain	Marquez, 2008	Ukraine	Maliy et al., 2010
Spain	Marquez, 2009	Ukraine	Maliy et al., 2012
Spain	Porta et al., 2008	Ukraine	Moiseeva et al., 1991
Spain	Segura et al., 2014	Ukraine	Naglov et al., 2000
Spain	Segura et al., 2014	Ukraine	Nebogatkin, 1996
Spain	Toledo et al., 2009	Ukraine	Nebogatkin, 1999
Sri Lanka	Liyanarachchi et al., 2015	Ukraine	Nebogatkin, 2012a
Sudan	Fagir, El-Rayah, 2009	Ukraine	Nebogatkin, 2012b
Sweden	Caroline et al., 2014	Ukraine	Nebogatkin, 2014
Sweden	Severinsson et al., 2010	Ukraine	Nebogatkin, Toppinets, 1997
Switzerland	Casati et al., 2006	Ukraine	Nikiforova et al., 2005a
Switzerland	Gern et al., 1997	Ukraine	Nikiforova et al., 2005b
Switzerland	Gray et al., 1994	Ukraine	Panchihina, Chabrat, 2011
Switzerland	Hofmann-Lehmann et al., 2004	Ukraine	Pohil et al., 2011
Switzerland	Jouda et al., 2003	Ukraine	Semenyshyn et al., 2010
Tanzania	Anstey et al., 1997	Ukraine	Semenyshyn et al., 2010
Tanzania	Kwak et al., 2014	Ukraine	Simonenko (Nikiforova), 2000
Turkey	Aktas et al., 2015	Ukraine	Tkachenko et al., 2005
Turkey	Ekici et al., 2013	Ukraine	Trunova et al., 2012
Turkey	Gargili et al., 2010	Ukraine	Voronova et al., 2008
Turkey	Gazyacı et al., 2010	Ukraine	Voronova et al., 2012
Turkey	Güneş et al., 2005	Ukraine	Zavoloka, Zavoloka, 2010
Turkey	Gunes et al., 2009	United Kingdom	Fox, Sykes 1985
Turkey	Hekimoğlu, Özer, 2015	United Kingdom	Greenfield, 2011
Turkey	Kar et al., 2013	United Kingdom	Guy, Farquhar 1991
Turkey	Koc et al., 2015	United Kingdom	Hansford et al., 2014
Turkey	Vatansever et al., 2008	United Kingdom	Jennett et al., 2013
Ukraine	Adamovich, 1961	United Kingdom	Ogden et al., 2000
Ukraine	Akimov, Nebogatkin, 1995	United Kingdom	Rees, Axford, 1994
Ukraine	Akimov, Nebogatkin, 1996a	United Kingdom	Shaw et al., 2001
Ukraine	Akimov, Nebogatkin, 1996b	United Kingdom	Smith et al., 2011
Ukraine	Akimov, Nebogatkin, 1997a	Uruguay	Venzal et al., 2003
Ukraine	Akimov, Nebogatkin, 1997b	Uruguay	Venzal et al., 2007
Ukraine	Akimov, Nebogatkin, 1999	USA	Alpert et al., 1992
Ukraine	Akimov, Nebogatkin, 2001	USA	Anderson et al., 1980
Ukraine	Akimov, Nebogatkin, 2002	USA	Anderson et al., 1983
Ukraine	Akimov, Nebogatkin, 2010	USA	Anderson et al., 1984
Ukraine	Akimov, Nebogatkin, 2011	USA	Anderson et al., 1985
Ukraine	Akimov, Nebogatkin, 2011a	USA	Anderson et al., 1986
Ukraine	Akimov, Nebogatkin, 2011b	USA	Anderson et al., 1989
Ukraine	Akimov, Nebogatkin, 2013a	USA	Anderson et al., 1990
Ukraine	Akimov, Nebogatkin, 2013b	USA	Blanton et al., 2014
Ukraine	Akimov, Nebogatkin, 2013c	USA	Carey et al., 1980
Ukraine	Akimov, Nebogatkin, 2013d	USA	Childs et al., 2003

USA	Comer et al., 2001	USA	Magnarelli et al., 1987
USA	Comer et al., 2001	USA	Magnarelli et al., 1988
USA	Cooley, Kohls, 1944	USA	Magnarelli et al., 1993
USA	Cooley, Kohls, 1945	USA	Magnarelli et al., 1995
USA	Dahlgren, 2015	USA	Magnarelli et al., 1995
USA	Daniels et al., 1997	USA	Magnarelli, Anderson, 1988
USA	Dreyer et al., 1997	USA	Magnarelli, Swihart, 1991
USA	Dreyer et al., 1998	USA	Main et al., 1982
USA	Duffy et al., 1994	USA	Maupin et al., 1991
USA	Dykstra et al., 1997	USA	McQuiston, Nicholson, 2010
USA	Falco, Fish, 1988	USA	Means, White, 1997
USA	Filstein et al., 1980	USA	Oliver et al., 2000
USA	Fox, 1950	USA	Orr et al., 2013
USA	Gabriel et al., 2009	USA	Rydzewski et al., 2012
USA	Hamer et al., 2012	USA	Salgo et al., 1988
USA	Hamer et al., 2012	USA	Schwartz et al., 1991
USA	Hogsette, 2003	USA	Smith et al., 1983
USA	Hooker, 1912	USA	Stafford et al., 1998
USA	Hunter, Hooker, 1907	USA	Steere, Malawista, 1979
USA	Ijdo et al., 2000a	USA	Tinoco-Gracia et al., 2008
USA	Ijdo et al., 2000b	USA	Townsend et al., 2003
USA	Jobe et al., 2006	USA	Willis et al., 2012
USA	Jobe et al., 2007	USA	Wright et al., 1997
USA	Koch et al., 1982	USA	Yabsley, 2010
USA	Little et al., 2014	USA	Young, Goff, 1939
USA	Magnarelli et al., 1984	USA	Kelly, Mason, 1991
USA	Magnarelli et al., 1986	Zimbabwe	

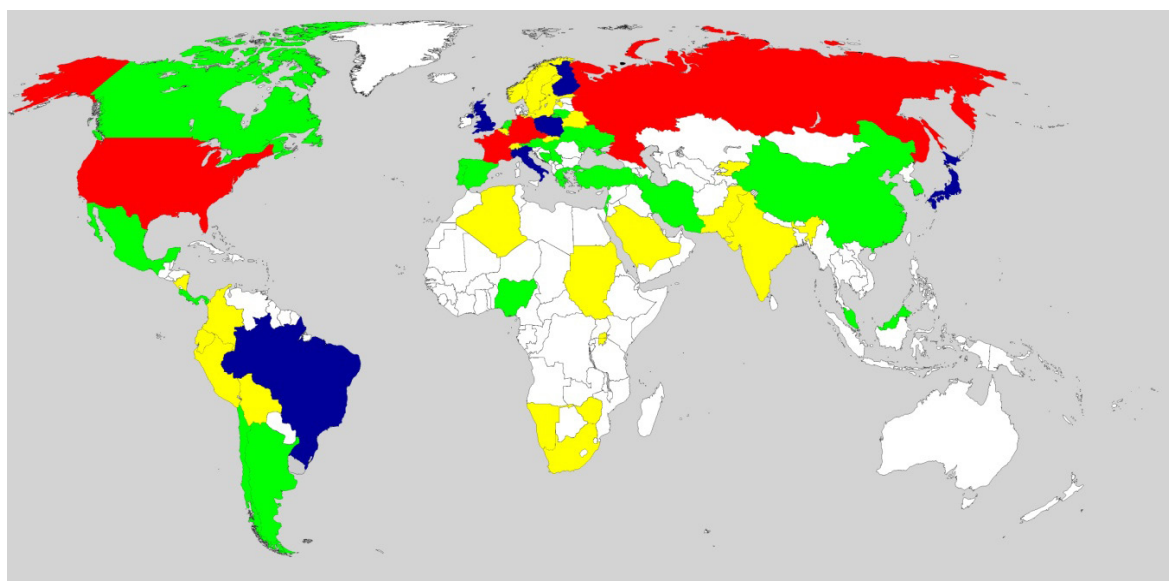


Fig. 1. Intensity of research on ixodid ticks in urban landscapes around the world by decades.

Legend: — 2 decades of research, — 3 decades, — 4 decades, — 5 decades.

Conclusions

The first such study reported in North America. Olenev & Ohandzhanyan were the first scientists to report ticks in cities of former U. S. S. R. countries (Novgorod, Russian Federation, and Yerevan, Armenia).

Acknowledgements

The authors thank O. Shevchenko for English translation and T. Miroshnichenko for proofreading texts.

References

- Abarca, K., López, J., Acosta-Jamett, G., Martinez-Valdebenito, C. (2013) Detection of *Rickettsia andeanae* in two regions of Chile. *Revista Chilena Infectología*, **30** (4), 388–394.
- Abd Rani, P. A., Irwin, P. J., Coleman, G. T., Gatne, M., Traub, R. J. (2011) A survey of canine tick-borne diseases in India. *Parasit Vectors*, Jul 19;4: 141, <http://www.parasitesandvectors.com/content/4/1/141>
- Adamovich, V. L. (1961) Landscape and geographical deployment of the ixodid ticks in the Volynian Poolissia. *Russian Journal of Zoology*, **40** (5), 676–685 [In Russian].
- Aguiar, D. M., Cavalcante, G. T., Pinter, A., Gennari, S. M., Camargo, L. M., Labruna, M. B. (2007) Prevalence of *Ehrlichia canis* (Rickettsiales: Anaplasmataceae) in dogs and *Rh. sanguineus* (Acari: Ixodidae) ticks from Brazil. *Journal of Medical Entomology*, **44** (1), 126–132.
- Aguiar, D. M., Hagiwara, M. K., Labruna, M. B. (2008) In vitro isolation and molecular characterization of an *Ehrlichia canis* strain from São Paulo, Brazil. *Brazilian Journal of Microbiology*, **39** (3), 489–493.
- Akimov, I. A., Nebogatkin, I. V. (1995) Ixodid ticks (Acarina, Ixodidae) and Lyme disease in Ukraine. *Vestnik zoologii*, (1), 76–78 [In Russian].
- Akimov, I. A., Nebogatkin, I. V. (1996) The results of the study of ticks (Ixodidae, Acarina) and Lyme disease in Ukraine. In: *The viral, rickettsial and bacterial infection carried by ticks*, Irkutsk, 87–88 [In Russian].
- Akimov, I. A., Nebogatkin, I. V. (1996) Natural foci of tick-borne encephalitis in Ukraine. In: *The viral, rickettsial and bacterial infection carried by ticks*, Irkutsk, 87–88 [In Russian].
- Akimov, I. A., Nebogatkin, I. V. (1997) Certain results of the Ixodid ticks study in the borreliosis focuses in Ukraine. *Vestnik zoologii*, (4), 72–77 [In Russian].
- Akimov, I. A., Nebogatkin, I. V. (1997) Ticks Kiev: urbozoological and epizootiological aspects. In: *Environmental Monitoring parasites. Parasitic systems in a changing environment: predicting the effects of global warming and the increasing anthropogenic pressure*, 18–20 November, St. Petersburg, 11–12 [In Russian].
- Akimov, I. A., Nebogatkin, I. V. (1999) Monitoring of paths of circulation of the activator of Lyme disease in urban natural refuges. In: *Proceedings, VIII International Conference on Lyme Boreliosis and other Emerging Tick-Borne Diseases*, 20–24 June 1999, Munich, 44.
- Akimov, I. A., Nebogatkin, I. V. (2001) Borrelia and Borreliemia on Territory of Kyiv and in its Vicinity. *Vestnik zoologii*, **35** (3), 30.
- Akimov, I. A., Nebogatkin, I. V. (2002) Ticks of Kyiv — Urbozoological and Epyzootological Aspects. *Vestnik zoologii*, **36** (1), 91–95 [In Russian].
- Akimov, I. A., Nebogatkin, I. V. (2010) Seasonal Changes in Activity, Sex Composition and Areal of the Tick *Ixodes ricinus* (Acari, Ixodida) in the Landscape-Geographical Regions of Ukraine. *Vestnik zoologii*, **44** (3), 245–251.
- Akimov, I. A., Nebogatkin, I. V. (2011) Distribution of the Ixodidae Tick *Hyalomma marginatum* Koch (Acari: Ixodidae) within Ukraine. *Vestnik zoologii*, **45** (4), 371–374.
- Akimov, I. A., Nebogatkin, I. V. (2011) Distribution of ticks of the genus *Dermacentor* (Acari: Ixodidae) in Ukraine. *Vestnik zoologii*, **45** (1), 35–40.
- Akimov, I. A., Nebogatkin, I. V. (2011) Dynamics of numbers and some ecological peculiarities of ticks (Acari, Ixodidae) in urbanized landscapes of Kyiv since the beginning of the XXI century. *Science magazine National Pedagogical University. M. P. Dragomanova. 20 series „Biology“*, (3), 98–109 [In Russian].
- Akimov, I. A., Nebogatkin, I. V. (2013) Species Diversity of Ticks (Acari: Ixodidae) In the Megalopolis Kyiv. In: *International Conference in Memoriam of Prof. Yuri S. Balashov, a Corresponding Member of the RAS: „Fundamental and Applied Aspects of the Study of Parasitic Arthropods in the XXI Century“*. Russia, St. Petersburg, 21–24 [In Russian].
- Akimov, I. A., Nebogatkin, I. V. (2013) Ticks (Acari: Ixodidae) on the shores of the lakes in the city (for example, in Kiev) and determining expediency of anti-ticks measures. *Veterinary medicine*, (97), 372–374 [In Russian].
- Akimov, I. A., Nebogatkin, I. V. (2013) Street and highway travel path of ticks (Acari, Ixodidae) in the city. In: *VIII Congress GO „Ukrainian Entomological Society“*, 26–30 August 2013 Kyiv, 8–9 [In Russian].
- Akimov, I. A., Nebogatkin, I. V. (2013) Changes in the urban stations and diversity ticks ixodids metropolis. In: *XV Conference Parasitologists Ukrainian Scientific Society* (Chernivtsi, 15–18 October 2013), Kyiv, 9 [In Russian].
- Aktas, M., Özübek, S., Altay, K., Ipek, N. D., Balkaya, İ., Utuk, A. E., Kırbas, A., Şimsek, S., Dumanli, N. (2015) Molecular detection of tick-borne rickettsial and protozoan pathogens in domestic dogs from Turkey. *Parasites & Vectors*, **8**, 157. doi: 10.1186/s13071-015-0763-z.
- Alcaino, H. (1985) Antecedentes sobre la garrapata café del perro (*Rh. sanguineus*). *Monografia Medicine Vet*, **7** (2), 48–55 [In Portuguese].
- Alekseev, A. N. (1996) The effect of the industrial center of St. Petersburg on tick-borne component of the biota (the appearance of pathologies, the trend growth of pathogens contamination). In: *Parasitological problems of large cities*, 6–7 [In Russian].
- Alekseev, A. N., Antykova, L. P., Puzin, Y. V., Smyslov, T. S., Oftina, N. I., Vavilov, A. P., Kuznetsov, G. I., Karataeva, A. G., Lukin, I. L., Bogdanov, K. S. (1996) Fauna blood-sucking arthropods and vector-borne infections in the territory of St. Petersburg. In: *Parasitological problems of large cities*, 7–8 [In Russian].
- Alekseev, A. N., Efremov, G. A., Labetskaya, A. G., Yakovich, M. M., Golovanov, E. N., Dubinin, E. V. (2005) In modern conditions ticks can appear in a residential area. *RET-info*, (2), 57–58 [In Russian].
- Alekseev, A. N. (2006) The effects of global climatic changes on bloodsucking ectoparasites and pathogens they transmit. *Vestnik Rossiiskoi akademii meditsinskikh nauk*, (3), 21–25 [In Russian].
- Alekseev, A. N., Dubinina, H. V. (2003) Multiple infections of tick-borne pathogens in *Ixodes* spp. (Acarina, Ixodidae). *Acta Zoologica Lithuanica*, **13**, 311–321.
- Alekseev, A. N., Dubinina, H. V., van De Pol, I., Schouls, L. M. (2001) Identification of *Ehrlichia* spp. and *Borrelia burgdorferi* in Ixodes ticks in the Baltic regions of Russia. Ixodes ticks in the Baltic regions of Russia. *Journal of Clinical Microbiology*, **39**, 2237–2242.
- Alekseev, A. N., Dubinina, H. V., Zygutienė, M., Efremova, G. A. (2008) Ticks and Other Bloodsucking Arthropods as Urban Pests Inside and Outside Dwellings. In: Robinson W. H., Bajomi D. eds. *Proceedings of the 6th International Conference on Urban Pests*. OOK-Press Kft, Veszprém, Hungary, 361–365.
- Alekseev, A. N., Semenov, A. V., Dubinina, H. V. (2003) Evidence of *Babesia microti* infection in multi-infected *Ixodes persulcatus* ticks in Russia. *Experimental and Applied Acarology*, **29** (3–4), 345–353.
- Almeida, A. P., Cunha, L. M., Bello, A. C., da Cunha, A. P., Domingues, L. N., Leite, R. C., Labruna, M. B. (2011) A novel *Rickettsia* infecting *Amblyomma dubitatum* ticks in Brazil. *Ticks Tick Borne Disease*, **2** (4), 209–212.
- Alpert, B., Esin, J., Sivak, S. L., Wormser, G. P. (1992) Incidence and prevalence of Lyme disease in a suburban Westchester County community. N. Y. State. *Journal of Medicinal*, **92**, 5–8.
- Alzahrani, A. G., Al-Shaiban, H. M., Al-Mazroa, M. A., Al-Hayani, O., Macneil, A., Rollin, P. E., Memish, Z. A. (2010) Alkhurma hemorrhagic fever in humans, Najran, Saudi Arabia. *Emerging Infectious Diseases*, **16** (12), 1882–1888.
- Anastos, G. (1950) The scutate ticks, or Ixodidae of Indonesia. *Entomological of America (N. S.)*, **30**, 1–144.
- Andaev, E. I., Borisova, T. I., Sidorova, E. A., Adelshin, R. V., Nikitin, A. Ya., Balakhonov, S. V. (2012) Isolation and molecular-genetic Characterization of tick-borne encephalitis virus from Ixodes ticks

- at Russian ISLAND (Primorye territory). *The Siberian Scientific Medical Journal*, **111** (4), 93–96 [In Russian].
- Anderson, J. F., Duray, P. H., Magnarelli, L. A. (1990) *Borrelia burgdorferi* and *I. scapularis* (dammini) prevalent in the greater Philadelphia area. *Journal of Infectious Diseases*, **161** (4), 811–812.
- Anderson, J. F., Johnson, R. C., Magnarelli, L. A., Hyde, F. W., Myers, J. E. (1986) *Peromyscus leucopus* and *Microtus pennsylvanicus* simultaneously infected with *Borrelia burgdorferi* and *Babesia microti*. *Journal of Clinical Microbiology*, **23** (1), 135–137.
- Anderson, J. F., Johnson, R. C., Magnarelli, L. A., Hyde, F. W. (1985) Identification of endemic foci of Lyme disease: isolation of *Borrelia burgdorferi* from feral rodents and ticks (*Dermacentor variabilis*). *Journal of Clinical Microbiology*, **22** (1), 36–38.
- Anderson, J. F., Magnarelli, L. A. (1980) Vertebrate host relationships and distribution of ixodid ticks (Acari: Ixodidae) in Connecticut, USA. *Journal of Medical Entomology*, **17**, 314–323.
- Anderson, J. F., Magnarelli, L. A. (1984) Avian and mammalian hosts for spirochete-infected ticks and insects in a Lyme disease focus in Connecticut. *Yale Journal of Biology and Medicine*, **57**, 627–641.
- Anderson, J. F., Magnarelli, L. A., Burgdorfer, W., Barbour, A. G. (1983) Spirochetes in *I. scapularis* (dammini) and mammals from Connecticut. *American Journal of Tropical Medicine and Hygiene*, **32**, 818–824.
- Anderson, J. F., Magnarelli, L. A., LeFebvre, R. B., Andreadis, T. G., McAninch, J. B., Perng, G. C., Johnson, R. C. (1989) Antigenically variable *Borrelia burgdorferi* isolated from cottontail rabbits and *Ixodes dentatus* in rural and urban areas. *Journal of Clinical Microbiology*, **27** (1), 13–20.
- Andoh, M., Andoh, R., Teramoto, K., Komiya, T., Kaneshima, T., Takano, A., Hayashidani, H., Ando, S. (2013) Survey of *Coxiella burnetii* in ticks collected from dogs in Japan. *Journal of Veterinary Medical Science*, **75** (8), 1115–1117.
- Anstey, N. M., Tissot Dupont, H., Hahn, C. G., Mwaikambo, E. D., McDonald, M. I., Raoult, D., Sexton, D. J. (1997) Seroepidemiology of *Rickettsia typhi*, spotted fever group rickettsiae, and *Coxiella burnetii* infection in pregnant women from urban Tanzania. *American Journal of Tropical Medicine and Hygiene*, **57** (2), 187–189.
- Antón, E., Noguerras, M. M., Pons, I., Font, B., Muñoz, T., Sanfeliu, I., Segura, F. (2008) *Rickettsia slovaca* infection in humans in the northeast of Spain: seroprevalence study. *Vector Borne Zoonotic Disease*, **8** (5), 689–694.
- Antykova, L. P., Bagh, O. N., Bagh, E. A. (1998) Ticks (Acarina, Ixodidae), tick-borne encephalitis, tick-borne Lyme borreliosis in the city of St. Petersburg. Problems of entomology in Russia, 1, 22 [In Russian].
- Araujo, A. C., Silveira, J. A. G., Azevedo, S. S., Nieri-Bastos, F. A., Ribeiro, M. F. B., Labruna, M. B., Horta, M. C. (2015) *Babesia canis vogeli* infection in dogs and ticks in the semiarid region of Pernambuco, Brazil. *Pesquisa Veterinária Brasileira*, **35** (5), 456–461.
- Arzua, M., Barros-Battesti, D. M. (1999) Parasitism of *Ixodes* (*Multidentatus*) *auritulus* Neumann (Acari: Ixodidae) on birds from the city of Curitiba, State of Paraná, Southern. *Memórias do Instituto Oswaldo Cruz*, **94** (5), 597–603.
- Arzua, M., Navarro da Silva, M. A., Famadas, K. M., Beati, L., Barros-Battesti, D. M. (2003) *Amblyomma aureolatum* and *Ixodes auritulus* (Acari: Ixodidae) on birds in southern Brazil, with notes on their ecology. *Experimental and Applied Acarology*, **31** (3–4), 283–296.
- Avsyukovich, E. E., Velichko, S. V., Tsyapa, N. V. (2011) The epidemiology of tick-borne borreliosis Features in the Ternopil region. In: *Problems and evolution of the epidemic process of leading and parasitic infections present*. Abstracts Kharkiv, 19 [In Ukrainian].
- Aureli, S., Foley, J. E., Galuppi, R., Rejmanek, D., Bonoli, C., Tampieri, M. P. (2012) *Anaplasma phagocytophilum* in ticks from parks in the Emilia-Romagna region of northern Italy. *Veterinaria Italiana*, **48**, 413–423.
- Balagula, T., Bondarenko, H. (1998) Piroplasmosis dogs in theory and in practice. *Friend*, (6), 54–56 [In Russian].
- Balagula, T. V., Zablocki, V. T., Akbayev, M. Sh. (1999) Epizootology babesiosis of dogs in terms of Moscow and the Moscow region. *Collection of scientific works MGUPB*, 29–31 [In Russian].
- Balakhonov, S. V., Nikitin, A. Y., Andreev, E. I., Allen, A. V., Borisenko, E. A., Zverev, T. V., Gordeyko, N. S., Krasnoshchekov, V. N., Adelshin, R. V., Borisov, T. I., Verzhutskaya, J. A., Vershinin, E. A., Sidorova, E. A. (2012) Ecological and parasitological response combined foci of infections transmitted by ticks, in the territory of the APEC summit (2012). *Siberian Medical Journal (Irkutsk)*, (4), 67–71 [In Russian].
- Barkalova, L. D., Bakhmet'eva, Iu. O., Slyn'ko, E. E., Romashova, N. B., Trankvilevskii, D. V., Gaponov, S. P., Manzhurina, O. A., Mamchik, N. P., Chubirko, M. I. (2009) Monitoring of arthropods of epidemiological and sanitary importance by ticks, in the territory of Voronezh. *Meditsinskaia parazitologiya i parazitarnye bolezni*, (2), 33–38.
- Bartosik, K., Kubrak, T., Olszewski, T., Jung, M., Buczek, A. (2008) Prevention of tick bites and protection against tick-borne diseases in south-eastern Poland. *Annals of Agricultural and Environmental Medicine*, **15** (2), 181–185.
- Bartosik, K., Sitarz, M., Szymańska, J., Buczek, A. (2011) Tick bites on humans in the agricultural and recreational areas in south-eastern Poland. *Annals of Agricultural and Environmental Medicine*, **18** (1), 151–157.
- Bašta, J., Plch, J., Hulínská, D., Daniel, M. (1999) Incidence of *Borrelia garinii* and *Borrelia afzelii* in *Ixodes ricinus* Ticks in an Urban Environment, Prague, Czech Republic, Between 1995 and 1998. *European Journal of Clinical Microbiology and Infectious Diseases*, **18** (7), 515–517.
- Bauch, R. S. (1993) Faunistisch — ökologische Untersuchungen über *Ixodes ricinus* im Stadtgebiet von Leipzig. *Applied parasitology*, **34**, 203–214.
- Baumgarten, B. U., Röllinghoff, M., Bogdan, C. (1999) Prevalence of *Borrelia burgdorferi* and granulocytic and monocytic ehrlichiae in *Ixodes ricinus* ticks from southern Germany. *Journal of Clinical Microbiology*, **37**, 3448–3455.
- Beichel, E., Petney, T. N., Hassler, D., Brückner, M., Maiwald, M. (1996) Tick infestation patterns and prevalence of *Borrelia burgdorferi* in ticks collected at a veterinary clinic in Germany. *Veterinary Parasitology*, **65**, 147–155.
- Belimenko, V. V., Sarukhanyan, A. R., Hristianovsky, P. I. (2011) Babesiosis of dogs in Moscow. In: *Actual problems of infectious diseases and other young age groups of farm animals, fish and bees International scientific-practical conference dedicated to the 50th anniversary of the founding of Iykozologii lab, laboratory ichthyopathology and Protection Department useful entomofauna*, 311–312 [In Russian].
- Belimenko, V. V., Hristianovsky, P. I., Sarukhanyan, A. R. (2010) Epizootology babesiosis of dogs in a modern city. In: *Predni vedecké novinky — 2010 Materiály VI Mezinárodní Vědecko-praktická konference*, 37–39 [In Russian].
- Bermúdez, S. E., Miranda, R. J., Smith, D. (2010) Ticks species (Ixodida) in the Summit Municipal Park and adjacent areas, Panama City, Panama. *Experimental and Applied Acarology*, **52** (4), 439–448.
- Bermúdez, C. S. E., Castro, A., Esser, H., Liefting, Y., García, G., Miranda, R. J. (2012) Ticks (Ixodida) on humans from central Panama, Panama (2010–2011). *Experimental and Applied Acarology*, **58** (1), 81–88.
- Bermúdez, C. S., Zaldivar, A. Y., Spolidorio, M. G., Moraes-Filho, J., Miranda, R. J., Caballero, C. M., Mendoza, Y., Labruna, M. B. (2011) Rickettsial infection in domestic mammals and their ectoparasites in El Valle de Antón, Coclé, Panamá. *Veterinary Parasitology*, **177** (1–2), 134–138.
- Bermúdez, S. C., Miranda, R. (2011) Distribution of ectoparasites of *Canis lupus familiaris* L. (Carnivora: Canidae) from Panama. *Revista MVZ Córdoba Veterinaria*, **16** (1), 2274–2282.

- Bermúdez, S. E., Ereemeeva, M. E., Karpathy, S. E., Samudio, F., Zambrano, M. L., Zaldivar, Y., Motta, J. A., Dasch, G. A. (2009) Detection and identification of rickettsial agents in ticks from domestic mammals in eastern Panama. *Journal of Medical Entomology*, **46** (4), 856–861.
- Beugnet, F., Bourdeau, P., Chalvet-Monfray, K., Cozma, V., Farkas, R., Guillot, J., Halos, L., Joachim, A., Losson, B., Miró, G., Otranto, D., Renaud, M., Rinaldi, L. (2014) Parasites of domestic owned cats in Europe: co-infestations and risk factors. *Parasites & Vectors* 7: 291 (25 June 2014) <http://www.parasitesandvectors.com/content/7/1/291>
- Beugnet, F., Kolasinski, M., Michelangeli, P. A., Vienne, J., Loukos, H. (2011) Mathematical modelling of the impact of climatic conditions in France on *Rh. sanguineus* tick activity and density since 1960. *Geospatial Health*, **5** (2), 255–263.
- Bezrukiy, E. S., Kobzar, B. E., Ishchuk, I. S., Polishchuk, A. A., Belous, A. R., Yahnitska, M. O. (2013) On the epidemiological situation of the incidence of Lyme — borreliosis in Ternopil. In: Proceedings of the Conference „Environment and Health“ (25–26 April 2013) Ternopil TDMUkrmedknyha 10. [In Ukrainian].
- Bhadesiya, C. M., Raval, S. K., Hasnani, J. J., Patel, P. V., Patel, D. M. (2014) Prevalence and Epidemiological Aspects of *Rhipicephalus sanguineus* in and Around Areas of Anand, Gujarat. *International Journal of Interdisciplinary Research and Innovations*, **2** (4), 164–168.
- Biaduń, W. (2008) Habitat preferences of the common tick *I. ricinus* L. in Lublin region. *Wiadomości parazytologiczne*, **54** (2), 117–22 [in Polish].
- Biaduń, W. (2011) New habitats of *Dermacentor reticulatus* (Fabricius, 1794) in the Lublin region. *Polish Journal of Environmental Studies*, **20** (2) 263–266.
- Biaduń, W., Chybowski, J., Najda, N. 2007. A new records of *Dermacentor reticulatus* (Fabricius, 1794) in Lublin region. *Wiadomości parazytologiczne*, **53** (1), 29–32 [in Polish].
- Biaduń, W., Krasnodebski, S. (2007) Occurrence of the common tick *I. ricinus* L. in environments of various degree and character of anthropogenic impact. *Wiadomości parazytologiczne*, **53** (2), 133–137 [in Polish].
- Biernat, B., Karbowski, G., Werszko, J., Stan'czak, J. (2014) Prevalence of tick-borne encephalitis virus (TBEV) RNA in *Dermacentor reticulatus* ticks from natural and urban environment, Poland. *Experimental and Applied Acarology*, **64** (4), 543–551.
- Biletska, H. V., Lozynskyi, I. M., Semenyshyn, O. B., Morochkovska, H. V., Morochkovski, R. S., Kozlovskiy, M. M., Drul, O. S., Rogochiy, E. G., Sholomey, M. V., Bon', O. S., Kinah, A. A., Berezovskiy, S. O. (2003) Identification and study of Lyme disease in Volyn' oblast. *Infectious Diseases*, (4), 53–56.
- Biletska, G. V., Semenyshyn, O. B., Ben, I. I., Shulgan, A. M., Drul, A. S., Fedoruk, V. I., Lozinsky, I. (2012) Modern parasitic systems of tick-borne infections in Lviv oblast. *Annals of Mechnikov Institute*, (4), 126–132 [in Ukrainian].
- Biletska, G. V., Shulgan, A. M., Ben, I. I., Mostyuk, A. I. (2013) Rising risk population natural focal transmissible infections due to adverse environmental factors (for example, Lviv region). In: Proceedings of the Conference „Environment and Health“ (25–26 April 2013) TDMUkrmedknyha Ternopil, 63 [In Ukrainian].
- Blanton, L. S., Walker, D. H., Bouyer, D. H. (2014) Rickettsiae and ehrlichiae within a city park: is the urban dweller at risk? *Vector Borne Zoonotic Disease*, **14** (2), 168–70.
- Bogdanova, E. N. (2002) Systematics commensal arthropods living in the settlements of the Russian Federation. In: Proc. XII Congress of REO, 19–24 August 2002, St. Petersburg., 43 [In Russian].
- Bogdanova, E. N. (2003) A comprehensive system of integrated medical disinfection. In: Health Professional practical medicine: Coll. Scien. articles dedicated. 10th anniversary of the MPF PPO MMA. Sechenov. M., 2, 289–291 [In Russian].
- Bogdanova, E. N. (2005) Ticks, harming human health in an urban environment, the example of Moscow, and a system of measures to combat them. *Medical Parasitology and parasitic diseases*, (3) 9–15 [In Russian].
- Bogdanova, E. N. (2006) Sinantropizatsiya ticks as a factor increasing their epidemiological significance. *Disinfection case*, (3) 50–53 [In Russian].
- Bogdanova, E. N. (2007) Scientific basis of an integrated biomedical system of regulation of the number of synanthropic arthropods. Author. Dis. Dr. biol. Science., Moscow, 1–48 [In Russian].
- Bogdanova, E. N. (2008) Medically important synanthropic arthropods OF Russia and neighboring countries. In: Robinson W. H., Bajomi D. eds. *Proceedings of the 6th International Conference on Urban Pests*. OOK-Press Kft, Veszprém, Hungary, 355–360.
- Bogdanova, E. N. (2008) Processes synanthropization mites and their epidemiological significance. In: *Proceedings of the IV All-Russian Congress of the Parasitological Society at the Russian Academy of Sciences' Parasitology in the XXI Century — Problems, methods, solutions*, **1**, 80–84 [In Russian].
- Bogomazova, O. L., Bezgodov, I. V., Uspenskiy, V. B., Miryashkin, N. A., Verhosina, M. M., Kazanova, V. B., Osipova, T. N., Romanenko E. G., Kozlova, I. V., Danchinova G. A. (2014) About a risk of infection of population tick infections in places of mass rest in Bodaibo district of the Irkutsk area. *Far Eastern Journal of Infectious Pathology*, (25), 82–84 [In Russian].
- Boiko, V. A., Trifonov, V. A., Potapov, V. S., Fassahov, R. S., Kutyarkin, A. V., Belyaev, A. N. Natural-foci infection in forest plantations of Kazan and the surrounding areas. *Kazan Medical Journal*, 2010, **91** (2), 129–136 [In Russian].
- Boiko, V. A., Potapov, V. S., Fassahov, R. S., Trifonov, V. A., Fazylov, V. H., Kutyarkin, A. V. (2007) *Ixodes tick borreliosis (Lyme disease) in the Republic of Tatarstan*. Kazan, 1–58 [In Russian].
- Bolshakov, V. N., Shapovalova, O. A., Vershinin, L. V. (2001) Specificity of formation of communities of species of animals and in man-made landscapes urbanizovanyh. *Ecology*, (5), 343–354 [In Russian].
- Borgoyakov, V. Y., Fomenko, N. V., Panov, V. V., Belov, E. D. (2010) Study of Borrelia infection of taiga ticks on the territory of the Novosibirsk Scientific Center. *Parasitology*, **44** (6), 543–556 [In Russian].
- Borgoyakov, V. Yu., Vaskova, A. A., Chikova, E. D., Fomenko, N. V. (2012) Variation in infection of Ixodes ticks by borreliosis and tick-borne encephalitis virus in NSC SB RAS during 2009–2011. *The Siberian Scientific Medical Journal*, **111** (4), 52–54 [In Russian].
- Buczek, A. (1991) Characteristics of *Argas (A.) reflexus* (Fabricius, 1794) (Acari: Ixodida: Argasidae) — a common parasite in Upper Silesia. *Wiadomości Parazytologiczne*, **37**, 375–380.
- Buczek, A., Bartosik, K. (2011) Occurrence of *Argas reflexus* (Fabricius, 1794) (Ixodida, Argasidae) in urban habitat of south-eastern Poland. *Wiadomości Parazytologiczne*, **57**, 277–279.
- Buczek, A., Ciura, D., Bartosik, K., Zaj, C. Z., Kulisz, J. (2014) Threat of attacks of *I. ricinus* ticks (Ixodida: Ixodidae) and Lyme borreliosis within urban heat islands in south-western Poland. *Parasites & Vectors*, **7** (1), 562 <http://www.parasitesandvectors.com/content/7/1/562>
- Bugmyrin, S. V., Romanov, L. Y., Bespyatova, L. A., Bugmyrin, L. A., Korotkov, Y. S., Ieshko, E. P., Karganova, G. G. (2008) Of an infected *Ixodes persulcatus* Schulze (Acari: Ixodidae) agents of Lyme disease in Karelia. *Transactions of Karelian Research Centre of Russian Academy of Sciences*, **13**, 41–44 [In Russian].
- Bukowska, K., Kosik-Bogacka, D., Kuzna-Grygiel, W. (2003) The occurrence of *Borrelia burgdorferi* sensu lato in the populations of *I. ricinus* in forest areas of Szczecin during 2000–2001. *Annals of Agricultural and Environmental Medicine*, **10** (1), 5–8.
- Burchard, L. (1985) Infestacio'n de viviendas por garrapatas de la especie *Argas neghmei* en Calama, Chile. *Boletín chileno de parasitología*, **40**, 45–46.

- Cakanac, R., Stajković, N., Calasan, S., Drndarević, D., Obradović, M. 1993. Exposure to *I. ricinus* bites among soldiers. *Glas. Srpska akademija medicinskih*, (43), 81–85.
- Campos, J. H., Costa, F. A. (2014) Participation of ticks in the infectious cycle of canine visceral leishmaniasis in Teresina, Piauí, Brazil. *Revista do Instituto de Medicina Tropical de São Paulo*, **56** (4), 297–300.
- Cao, W. C., Gao, Y. M., Zhang, P. H., Zhang, X. T., Dai, Q. — H., Dumler, J. S., Fang, L. — Q., Yang, H. (2000) Identification of *Ehrlichia chaffeensis* nested PCR in ticks from southern China. *Journal of Clinical Microbiology*, **38** (7), 2778–2780.
- Cardoso, C. P., Stalliviere, F. M., Schelbauer, C. A., de Souza, A. P., Bellato, V., Sartor, A. A. (2008) *Amblyomma tigrinum* in the Municipality of Lages, SC, and biology observations under laboratory conditions. *Brazilian Journal of Veterinary Parasitology*, **17** (1), 56–58.
- Cardoso, L., Mendão, C., Madeira de Carvalho, L. (2012) Prevalence of *Dirofilaria immitis*, *Ehrlichia canis*, *Borrelia burgdorferi* sensu lato, *Anaplasma* spp. and *Leishmania infantum* in apparently healthy and CVBD-suspect dogs in Portugal—a national serological study. *Parasites & Vectors*, Mar 27;5: 62. <http://www.parasitesandvectors.com/content/5/1/62>
- Cardoso, L., Yisaschar-Mekuzas, Y., Rodrigues, F. T., Costa, A., Machado, J., Diz-Lopes, D., Baneth, G. (2010) Canine babesiosis in northern Portugal and molecular characterization of vector-borne co-infections. *Parasites & Vectors*, Apr 8;3(1): 27. <http://www.parasitesandvectors.com/content/3/1/27>
- Carey, A. B., Krinsky, W. L., Main, A. J. (1980) *I. scapularis* (dammini) (Acari: Ixodidae) and associated ixodid ticks in south-central Connecticut, USA. *Journal of Medical Entomology*, **17**, 89–99.
- Casati, S., Sager, H., Gern, L., Piffaretti, J. C. (2006) Presence of potentially pathogenic *Babesia* sp. for human in *Ixodes ricinus* in Switzerland. *Annals of Agricultural and Environmental Medicine*, **13** (1), 65–70.
- Cassini, R., Zanutto, S., Frangipane del Rogalbono, A., Gabrielli, S., Calderini, P., Moretti, A., Tampieri, M. P., Pietrobelli, M. (2009) Canine piroplasmiasis in Italy: epidemiological aspects in vertebrate and invertebrate hosts. *Veterinary Parasitology*, **165**, 30–35.
- Cekanac, R., Pavlovic, N., Gledovic, Z., Grgurevic, A., Stajkovic, N., Lepsanovic, Z., Ristanovic, E. (2010) Prevalence of *Borrelia burgdorferi* in *Ixodes ricinus* ticks in Belgrade area. *Vector Borne Zoonotic Disease*, **10** (5), 447–52.
- Černý, V. (1963) Some aspects of the tick-infestation of cultivated landscape. In: Rosický B., Heyberger K. eds. *Questions of Natural Foci of Diseases, Proc. Symp. held in Prague*, November 26—29, 1963, Publ. House Czech. Acad. Sci., Prague, 313—317.
- Cerný, V. (1975) The role of mammals in natural foci of tick-borne encephalitis in Central Europe. *Folia Parasitologica*, **22**, 271–273.
- Černý, V. (1985) First case of introduction of the tick *Rh. sanguineus* to Czechoslovakia. *Folia Parasitologica*, **32**, 162.
- Černý, V. (1989) Introduction of the tick *Rh. sanguineus* to Czechoslovakia: an additional case. *Folia Parasitologica*, **36** (2), 184.
- Cerný, V., Daniel, M. (1980) Occurrence of ticks and chigger mites in urban areas (author's transl). *Ceskoslovenska epidemiologie, mikrobiologie, imunologie*, **29** (3), 178–183.
- Cerný, V., Daniel, M. (1985) The incidence of ticks in large cities and their epidemiologic significance. *Ceskoslovenska epidemiologie, mikrobiologie, imunologie*, **34** (4), 239–243.
- Cerný, V., Daniel, M. (1986) Occurrence of the tick *I. ricinus* in a landscape strongly influenced by human activities. *Wiadomosci parazytologiczne*, **32** (4–6), 351–353.
- Cerný, V., Rosický, B. (1979) Mammals as source of ectoparasites in towns. *Folia Parasitologica*, **26** (1), 93–95.
- Chausov, E. V., Ternovoi, V. A., Protopopova, E. V., Kononova, J. V., Konovalova, S. N., Pershikova, N. L., Romanenko, V. N., Ivanova, N. V., Bolshakova, N. P., Moskvitina, N. S., Loktev, V. B. (2010) Variability of the tick-borne encephalitis virus genome in the 5' noncoding region derived from ticks *I. persulcatus* and *I. pavlovskyi* in Western Siberia. *Vector Borne Zoonotic Disease*, **10** (4), 365–375.
- Chausov, E. V., Ternovoi, V. A., Protopopova, E. V., Konovalova, S. N., Kononova, J. V., Pershikova, N. L., Moskvitina, N. S., Romanenko, V. N., Ivanova, N. V., Bol'shakova, N. P., Moskvitin, S. S., Korobitsyn, I. G., Gashkov, S. I., Tiuten'kov, O. Iu., Kuranova, V. N., Kravchenko, L. B., Suchkova, N. G., Agulova, L. P., Loktev, V. B. (2009) Genetic diversity of ixodid tick-borne pathogens in Tomsk City and suburbs. *Parazitologiya*, **43** (5), 374–388.
- Chausov, E. V., Ternovoi, V. A., Protopopova, E. V., Konovalova, S. N., Kononova, Y. V., Pershikova, N. L., Loktev, V. B., Moskvitina, N. S., Romanenko, V. N., Ivanova, N. V., Bolshakova, N. P., Moskvitin, S. S., Korobitsin, I. G., Gashkov, S. I., Tiutenkov, O. Y., Kuranova, V. N., Kravchenko, L. B., Suchkova, N. G., Agulova, L. P. (2010) Genetic diversity of tick-borne pathogens in Tomsk and environs. *Entomological Review*, **90** (2), 240–250.
- Chen, Z., Liu, Q., Liu, J. Q., Xu, B. L., Lv, S., Xia, S., Zhou, X. N. (2014) Tick-borne pathogens and associated co-infections in ticks collected from domestic animals in central China. *Parasit & Vectors*, May 22; 7: 237. <http://www.parasitesandvectors.com/content/7/1/237>
- Chernousov, N. F., Tolkachev, O. V. (2009) Biocenosis small mammals urban areas of the forest zone. *Bulletin KrasGAU*, (8), 55–62 [In Russian].
- Chicu, V., Uspensky, I., Melnic, V., Culibacnăi, E., Guțu, A., Cheorchita, S., Conovalov, Iu., Movilă, A. (2002) Unele particularități ecologice și epidemiologice ale focarelor urbane de zoonotonoze. In: *Profilaxia — strategia principală a sănătății publice*, Chișinău, 262–265.
- Childs, J. E., Paddock, C. D. (2003) The ascendancy of *Amblyomma americanum* as a vector of pathogens affecting humans in the United States. *Annual Review of Entomology*, **48**, 307–337.
- Chmielewska-Badora, J. (1998) Seroepidemiologic study on Lyme borreliosis in the Lublin region. *Annals of Agricultural and Environmental Medicine*, **5** (2), 183–186.
- Chmielewski, T., Andrzejewski, K., Maczka, I., Fiecek, B., Radlińska, M., Tylewska-Wierzbanska, S. (2011) Ticks infected with bacteria pathogenic to humans in municipal parks in Warsaw. *Przegląd epidemiologiczny*, **65** (4), 577–581.
- Chudinov, P. I., Netsky, G. I., Chernuha, A. D., Evstigneeva, N. S., Pastukhov, A., Chernov, E. E., Prigorodov, V. I. (1971) Prevention of tick-borne encephalitis in the population of the city. *Medical Parasitology and Parasitic Diseases*, 40, 588–591 [In Russian].
- Ciceroni, L., Bartoloni, A., Leoncini, F., Ciarrocchi, S., Pinto, A., Favia, G., Bartalesi, F., Scagnoli, L., Iori, A. (2003) Risk of tick-borne bacterial diseases in humans in the Florence area, Tuscany. *Annals of the New York Academy of Sciences*, **990**, 346–349.
- Cicuttin, G. L., Brambati, D. F., Rodríguez Eugui, J. I., Lebrero, C. G., De Salvo, M. N., Beltrán, F. J., Gury Dohmen, F. E., Jado, I., Anda, P. (2014) Molecular characterization of *Rickettsia massiliae* and *Anaplasma platys* infecting *Rh. sanguineus* ticks and domestic dogs, Buenos Aires (Argentina). *Ticks and Tick-borne Diseases*, **5** (5), 484–488.
- Cicuttin, G. L., Sassaroli, J. C., Ardiles, M. I., Zotter, A. C., Guglielmone, A. A., Nava, S. (2013) The presence of two tick species (Acari: Ixodidae) with medical importance in Buenos Aires City. *Medicina (B Aires)*, **73** (4), 389–390.
- Cicuttin, G. L., Vidal, P., Nazarena De Salvo, M., Beltrán, F. J., Gury Dohmen, F. E. (2014) Molecular detection of *Rickettsia massiliae* and *Anaplasma platys* infecting *Rh. sanguineus* ticks and dogs, Bahía Blanca (Argentina). *Revista chilena de infectología*, **31** (5), 563–568 [in Spanish].
- Cieniuch, S., Stanczak, J., Ruczaj, A. (2009) The First Detection of *Babesia* EU1 and *Babesia canis canis* in *Ixodes ricinus* Ticks (Acari, Ixodidae) Collected in Urban and Rural Areas in Northern Poland. *Polish Journal of Microbiology*, **58**, 231–236.
- Cisak, E., Chmielewska-Badora, J., Rajtar, B., Zwolin'ski, J., Jablon'ski, L., Dutkiewicz, J. (2002) Study on the occurrence of *Borrelia*

- burgdorferi* sensu lato and tick-borne encephalitis virus (TBEV) in ticks collected in Lublin region (eastern Poland). *Annals of Agricultural and Environmental Medicine*, **9**, 105–110.
- Cisak, E., Chmielewska-Badora, J., Zwoliński, J., Wojcik-Fatla, A., Polak, J., Dutkiewicz, J. (2005) Risk of tick-borne bacterial diseases among workers of Roztocze National Park (south-eastern Poland). *Annals of Agricultural and Environmental Medicine*, **12**, 127–132.
- Cisak, E., Chmielewska-Badora, J., Zwoliński, J., Wojcik-Fatla, A., Zajac, V., Skórska, C., Dutkiewicz, J. (2008) Study on Lyme borreliosis focus in the Lublin region (eastern Poland). *Annals of Agricultural and Environmental Medicine*, **15** (2), 327–332.
- Cisak, E., Wójcik-Fatla, A., Stojek, N. M., Chmielewska-Badora, J., Zwoliński, J., Buczek, A., Dutkiewicz, J. (2006) Prevalence of *Borrelia burgdorferi* genospecies in *Ixodes ricinus* ticks from Lublin region (Eastern Poland). *Annals of Agricultural and Environmental Medicine*, **13**, 301–306.
- Claerebout, E., Losson, B., Cochez, C., Casaert, S., Dalemans, A.-C., Cat, A. D., Madder, M., Saegerman, C., Heyman, P., Lempereur, L. (2013) Ticks and associated pathogens collected from dogs and cats in Belgium. *Parasit & Vectors*, **6**: 183. <http://www.parasitesandvectors.com/content/6/1/183>
- Clarke, L. L., Ballweber, L. R., Allen, K., Little, S. E., Lappin, M. R. (2014) Prevalence of select vector-borne disease agents in owned dogs of Ghana. *Journal of the South African Veterinary Association*, **85** (1), 996. doi: 10.4102/jsava.v85i1.996.
- Clifford, C. M., Hoogstraal, H., Radovsky, F. J., Stiller, D., Keirans, J. E. (1980) *Ornithodoros (Alectorobius) amblus* (Acarina: Ixodoidea: Argasidae): identity, marine bird and human hosts, virus infections, and distribution in Peru. *Journal of Parasitology*, **66**, 312–323.
- Comer, J. A., Paddock, C. D., Childs, J. E. (2001) Urban zoonoses caused by *Bartonella*, *Coxiella*, *Ehrlichia*, and *Rickettsia* species. *Vector Borne Zoonotic Disease*, **1**, 91–118.
- Comer, J. A., Vargas, M. C., Poshni, I., Childs, J. E. (2001) Serologic evidence of *Rickettsia akari* infection among dogs in a metropolitan city. *American Veterinary Medical Association*, **218** (11), 1780–1782.
- Cooley, R. A., Kohls, G. M. (1944) The genus *Amblyomma* (Ixodidae) in the United States. *Journal of Parasitology*, **30**, 77–111.
- Cooley, R. A., Kohls, G. M. 1945. The genus *Ixodes* in North America. *Bulletin of National Institute of Health Sciences*, **184**, 1–246.
- Corrain, R., Drigo, M., Menandro, M. L., Mondin, A., Pasotto, D., Martini, M., Fenati, M. (2012) Study on ticks and tick-borne zoonoses in public parks in Italy. *Zoonoses and Public Health*, **59** (7), 468–476.
- Costa, A. P., Silva, A. B., Costa, F. B., Xavier, G. S., Martins, T. F., Labruna, M. B., Guerra, R. M. (2013) A survey of ectoparasites infesting urban and rural dogs of Maranhão state, Brazil. *Journal of Medical Entomology*, **50** (3), 674–678.
- Costa, I. P., Bonoldi, V. L., Yoshinari, N. H. (2002) Search for *Borrelia* sp. in ticks collected from potential reservoirs in an urban forest reserve in the State of Mato Grosso do Sul, Brazil: a short report. *Memórias do Instituto Oswaldo Cruz*, **97** (5), 631–635.
- Costa, L. M. Jr., Rembeck, K., Ribeiro, M. F., Beelitz, P., Pfister, K., Passos, L. M. (2007) Sero-prevalence and risk indicators for canine ehrlichiosis in three rural areas of Brazil. *The Veterinary Journal*, **174** (3), 673–676.
- Costa-Júnior, L. M., Rembeck, K., Passos, L. M., Ribeiro, M. F. (2013) Factors associated with epidemiology of *Anaplasma platys* in dogs in rural and urban areas of Minas Gerais State, Brazil. *Preventive Veterinary Medicine*, **109** (3–4), 321–326.
- Criado-Fornelio, A., Martinez-Marcos, A., Buling-Sarana, A., Barba-Carretero, J. C. (2003) Molecular studies on *Babesia*, *Theileria* and *Hepatozoon* in southern Europe. Part I: Epizootiological aspects. *Veterinary Parasitology*, **113** (3–4), 189–201.
- Cruz-Vazquez, C., Garcia-Vazquez, Z. (1999) Seasonal distribution of *Rhipicephalus sanguineus* ticks (Acari: Ixodidae) on dogs in an urban area of Morelos, Mexico. *Experimental and Applied Acarology*, **23**, 277–280.
- da Costa, A. P., Costa, F. B., Labruna, M. B., Silveira, I., Moraes-Filho, J., Soares, J. F., Spolidorio, M. G., Guerra, Rde, M. (2015) A serological and molecular survey of *Babesia vogeli*, *Ehrlichia canis* and *Rickettsia* spp. among dogs in the state of Maranhão, northeastern Brazil. *Brazilian Journal of Veterinary Parasitology*, **24** (1), 28–35.
- da Silva Costa, L. F., Nunes, P. H., Soares, J. F., Labruna, M. B., Camargo-Mathias, M. I. (2011) Distribution of *Rickettsia rickettsii* in ovary cells of *Rh. sanguineus* (Latreille, 1806) (Acari: Ixodidae). *Parasit & Vectors*, **4**, 222. doi: 10.1186/1756-3305-4-222.
- Dahlgren, F. S., Heitman, K. N., Drexler, N. A., Massung, R. F., Behravesh, C. B. (2015) Human Granulocytic Anaplasmosis in the United States from 2008 to 2012: A Summary of National Surveillance Data. *American Journal of Tropical Medicine and Hygiene*, **93** (1), 66–72.
- Daniel M., Černý, V. (1986) Distribution and abundance of *Ixodes ricinus* L. under Prague. *Medical Parasitology and parazitarnie disease*, (2), 39–43 [In Russian].
- Daniel, M., Černý, V. (1990) Occurrence of the tick *I. ricinus* (L.) under the conditions of antropopressure. *Folia parasitologica*, **37** (2), 183–186.
- Daniel, M., Černý, V., Korenberg, E. I. (1986) A contribution to the methods of estimating absolute tick numbers. *Folia Parasitologica*, **33**, 371–379.
- Daniels, T. J., Falco, R. C., Schwartz, I., Varde, S., Robbins, R. G. (1997) Deer ticks (*I. scapularis* (*dammini*)) and the agents of Lyme disease and human granulocytic ehrlichiosis in a New York City park. *Emerging Infectious Diseases*, **3** (3), 353–355.
- Danchinova, G. A., Lyapunov, A. V., Hasnatinov, M. A., Chaporgina, E. A., Arbat, E. V., Petrova, I. V., Savelkaeva, M. V., Gorbunova, E. L., Tunic, T. (2012) Ecological and geographic characteristics of negotiability of people affected by tick bites in the Irkutsk region and beyond. *Siberian Medical Journal (Irkutsk)*, (4), 64–67 [In Russian].
- Dantas-Torres, F. (2010) Biology and ecology of the brown dog tick, *Rh. sanguineus*. *Parasit Vectors*, **3**, 26. <http://www.parasitesandvectors.com/content/3/1/26>
- Dantas-Torres, F., Figueredo, L. A., Brandão-Filho, S. P. (2006) *Rh. sanguineus* (Acari: Ixodidae), the brown dog tick, parasitizing humans in Brazil. *Revista da Sociedade Brasileira de Medicina Tropical*, **39**, 64–67.
- Dantas-Torres, F., Figueredo, L. A., Faustino, M. A. G. (2004) Ectoparasitos de cães provenientes de alguns municípios da Região Metropolitana do Recife, Pernambuco, Brasil. *Revista Brasileira de Parasitologia Veterinária*, **13**, 151–154.
- Dantas-Torres, F., Latrofa, M. S., Annoscia, G., Giannelli, A., Parisi, A., Otranto, D. (2013) Morphological and genetic diversity of *Rh. sanguineus* sensu lato from the New and Old Worlds. *Parasit Vectors*, **6**, 213. <http://www.parasitesandvectors.com/content/6/1/213>
- Dantas-Torres, F., Otranto, D. (2014) Dogs, cats, parasites, and humans in Brazil: opening the black box. *Parasites Vectors*, **7**, 22. <http://www.parasitesandvectors.com/content/7/1/22>
- Dantas-Torres, F. (2009) Ticks on domestic animals in Pernambuco, Northeastern Brazil. *Revista Brasileira de Parasitologia Veterinária*, **18** (3), 22–28.
- Dautel, H., Dippel, C., Oehme, R., Hartelt, K., Schettler, E. (2006) Evidence for an increased geographical distribution of *Dermacentor reticulatus* in Germany and detection of *Rickettsia* sp. RpA4. *International Journal of Medical Microbiology*, **40**, 149–156.
- Dautel, H., Dippela, C., Kaemmer, D., Werkhausen, A., Kahl, O. (2008) Winter activity of *I. ricinus* in a Berlin forest. *International Journal of Medical Microbiology*, **298**, 50–54.

- Dautel, H., Kahl, O. (1999) Ticks (Acari: Ixodoidea) and their medical importance in the urban environment. In: Robinson W. H., Rettich F., Rambo G. W. eds. *Proceedings of the 3rd International Conference on Urban Pests*. Czech University of Agriculture, Prague, 73–82.
- de Almeida, R. F., Garcia, M. V., Cunha, R. C., Matias, J., de Silva, E. A., de Fatima Cepa Matos, M., Andreotti, R. (2013) Ixodid fauna and zoonotic agents in ticks from dogs: first report of *Rickettsia rickettsii* in *Rh. sanguineus* in the state of Mato Grosso do Sul, mid-western Brazil. *Experimental and Applied Acarology*, **60** (1), 63–72.
- de Lima, V. L., Figueiredo, A. C., Pignatti, M. G., Modolo, M. (1995) Spotted fever in the town of Pedreira, São Paulo state, Brazil. The relationship between the occurrence of cases and human parasitism by ixodid ticks. *Revista da Sociedade Brasileira de Medicina Tropical*, **28** (2), 135–137.
- Denisov, A. (2009) Spatial distribution of ticks in urban areas the Lower Volga region. *Bulletin of the University of Mordovia*, (1), 22–23 [In Russian].
- Denisov, A. A. (2010) Features of distribution of fauna of ticks in the territory of the Lower Volga region. *Proceedings of the Orenburg State University Agronomy*, **3** (27), 210–213 [In Russian].
- Dnistryan, S. S., Avsyukovich, E. E., Velichko, S. V., Ishchuk, I. S. (2013) Lyme disease in Ternopil. In: Proceedings of the conference „Environment and Health“ (25–26 April 2013) Ternopil TDMUUKrmedknyha 63 [In Ukrainian].
- de Sousa, R., Santos-Silva, M., Santos, A. S., Barros, S. C., Torgal, J., Walker, D. H., Bacellar, F. (2007) *Rickettsia conorii* Israeli tick typhus strain isolated from *Rh. sanguineus* ticks in Portugal. *Vector Borne Zoonotic Disease*, **7** (3), 444–447.
- Derdáková, M., Václav, R., Pangráčová-Blaňárová, L., Selyemová, D., Kočí, J., Walder, G., Špitalská, E. (2014) *Candidatus Neoehrlichia mikurensis* and its co-circulation with *Anaplasma phagocytophilum* in *Ixodes ricinus* ticks across ecologically different habitats of Central Europe. *Parasites & Vectors*, **7**, 160. <http://www.parasitesandvectors.com/content/7/1/160>
- Di Luca, M., Toma, L., Bianchi, R., Quarchioni, E., Marini, L., Mancini, F., Ciervo, A., Khoury, C. (2013) Seasonal dynamics of tick species in an urban park of Rome. *Ticks Tick Borne Disease*, **4** (6), 513–517.
- Ding, S., Yin, H., Xu, X., Liu, G., Jiang, S., Wang, W., Han, X., Liu, J., Niu, G., Zhang, X., Yu, X. J., Wang, X. (2014) A cross-sectional survey of severe fever with thrombocytopenia syndrome virus infection of domestic animals in Laizhou City, Shandong Province, China. *Japanese journal of infectious diseases*, **67** (1), 1–4.
- Diniz, P. P., Morton, B. A., Tngrian, M., Kachani, M., Barrón, E. A., Gavidia, C. M., Gilman, R. H., Angulo, N. P., Brenner, E. C., Lerner, R., Chomel, B. B. (2013) Infection of domestic dogs in Peru by zoonotic bartonella species: a cross-sectional prevalence study of 219 asymptomatic dogs. *PLOS Neglected Tropical Diseases*, **7** (9), 2393.
- Dmitrović, R. (1996) Lajmska bolest u Jugoslaviji (Lyme disease in Yugoslavia). *Velarta, Belgrade*, 212.
- Dmitrović, R., Mladenović, V., Derković, D., Antonijević, B., Lazović, M., Krstić, A. (1989) Lyme borreliosis in the district of Belgrade. In: *IVth Prague rheumatological symposium, Prague, Czechoslovakia*, Abstracts, 7.
- Dmitrović, R., Popović, N. (1993) Lajmska bolest. *Veterinarski glasnik*, **47** (1–2), 59–63.
- Domanovo, V. V. (2005) On the question epizootology babesiosis of dogs in Moscow. *Veterinary Consultant*, (4), 20–21 [In Russian].
- Drellich, A., Andreassen, A., Vainio, K., Kruszyński, P., Wąsik, T. J. (2014) Prevalence of tick-borne encephalitis virus in a highly urbanized and low risk area in Southern Poland. *Ticks Tick Borne Disease*, Aug 6. pii: S1877–959X (14)00138–1. doi: 10.1016/j.ttbdis. 2014.04.020.
- Dreyer, K., Fourie, L. J., Kok, D. J. (1997) Predation of livestock ticks by chickens as a tick-control method in a resource-poor urban environment. *Onderstepoort Journal of Veterinary Research*, **64** (4), 273–276.
- Dreyer, K., Fourie, L. J., Kok, D. J. (1998) Tick diversity, abundance and seasonal dynamics in a resource-poor urban environment in the Free State Province. *Onderstepoort Journal of Veterinary Research*, **65** (4), 305–316.
- Dubská, L., Literák, I., Sychra, O., Kocianova, E., Taragelova, V. (2009) Differential role of passerine birds in distribution of borrelia spirochetes, based on data from ticks collected from birds during the postbreeding migration period in central Europe. *Applied and Environmental Microbiology*, **75** (3), 596–602.
- Duffy, D. C., Clark, D. D., Campbell, S. R., Gurney, S., Perello, R., Simon, N. (1994) Landscape patterns of abundance of *I. scapularis* (dammini) (Acari: Ixodidae) on Shelter Island, New York. *Journal of Medical Entomology*, **31** (6), 875–879.
- Duscher, G. G., Feiler, A., Leschnik, M., Joachim, A. (2013) Seasonal and spatial distribution of ixodid tick species feeding on naturally infested dogs from Eastern Austria and the influence of acaricides / repellents on these parameters. *Parasit & Vectors*, **6**, 76. <http://www.parasitesandvectors.com/content/6/1/76>
- Dutto, M., Curti, P., Trucco, A., Montù, D. (2012) Occurrence of ticks (Acari: Ixodidae) in public parks in Cuneo province (Piemonte, Italy). *Annali di Igiene*, **24** (4), 345–348.
- Dvortsova, I., Moskvitina, E., Pichurina, N., Orekhov, I., Zabashta, M., Feronov, D. On the possibility of the virus of tick-borne encephalitis circulation in the Rostov region. *Universum: medicine and pharmacology*, **15** (2). <http://7universum.com/ru/med/archive/item/1931> [In Russian].
- Dyk, V. (1957) Fragmentary tick-infested sites near a housing estate with inhabitants owning dogs. *Sbornik Vysoké Školy Zemědělské a Lesnické v Brně Řada*, **5** (1), 53–57.
- Dykstra, E. A., Slater, M. R., Teel, P. D., Russell, L. H. Jr. (1997) Perceptions of veterinary clinics and pest control companies regarding tick-related problems in dogs residing in Texas cities. *American Veterinary Medical Association*, **210** (3), 360–365.
- Dziemian, S., Michalik, J., Łacińska, B. Pi., Bialik, S., Sikora, B., Zwolak, R. (2014) Infestation of urban populations of the Northern white-breasted hedgehog, *Erinaceus roumanicus*, by *Ixodes* spp. ticks in Poland. *Medical and Veterinary Entomology*, **28** (4), 465–469.
- Dziemian, S., Pilacinska, B., Bogawski, P., Michalik, J., (2010) Infestation of the Northern white-breasted hedgehog (*Erinaceus roumanicus*) with *Ixodes* ticks in urban ecosystems of the city of Poznań. In: Buczek A., Błaszak C. eds. *ARTHROPODS. Ecological and pathological aspects of parasite-host relationships*. Akapit, Lublin, 41–47.
- Dziemian, S., Sikora, B., Pilacińska, B., Michalik, J., Zwolak, R. (2015) Ectoparasite loads in sympatric urban populations of the northern white-breasted and the European hedgehog. *Parasitology Research*, **114** (6), 2317–2323.
- Ekici, M., Keskin, A., Bursali, A., Tekin, S. (2013) Investigation of Crimean Congo Hemorrhagic Fever Virus in Ticks (Acari: Ixodidae) Infesting on Hedgehogs in Turkey. *Journal of New Results in Science*, (2), 31–38.
- Efremov, G. A., Jankovic, M. M. (2009) Pasture species of ticks in the territory of Minsk and the assessment of the role of rodents in the maintenance of their numbers. *Journal of Mordovia State University*, (1), 82–83 [In Russian].
- el-Bahrawy, A. A., al-Dakhil, M. A. (1993) Studies on the interrelation between rodents and their ectoparasitic acarines in Riyadh region, Saudi Arabia. *Journal of the Egyptian Society of Parasitology*, **23** (3), 675–685.
- El-Mahallawy, H. S., Lu, G., Kelly, P., Xu, D., Li, Y., Fan, W., Wang, C. (2015) Q fever in China: a systematic review, 1989–2013. *Epidemiology & Infection*, **143** (4), 673–681.
- Emchuk, E. M. (1972) Role of the ixodid ticks and pathogen transfer of infection diseases in the formation of a regional avifauna. In: *Problems of parazytology*. Part 1. Kiev, 290–292 [In Russian].

- Ephraim, Ch., Yakovich, M. M. (2008) Ticks parks and green space of the city of Minsk. In: *The dynamics of research is 2008: the IV materials. scientific-prakt. konf*, Sofia, „sluggish GRAD-BG“ OOD Sofia, 53–55 [In Russian].
- Ermakov, A. V., Vasilenko, N. F., Maletskaya, O. V., Kulichenko A. N. (2012) Epidemiological situation on vector-borne natural-focal infections in the Territory. Immunological monitoring of the vector-borne natural focal infection on the territory of Caucasus Mineralnye Vody. *Journal of medical North Caucasus*, **25** (1), 43–46 [In Russian].
- Ermolova, N. V., Lazarenko, E. V., Zhiltsova, A. Y., Shaposhnikova, L. I., Zaikina, I. N. (2015) Species composition and seasonal population dynamics of ticks in the territory of the caucasian mineral waters, Stavropol region. Modern problems of science and education, (3), URL: www.science-education.ru/123–20213 [In Russian].
- Estrada, D. A., Schumaker, T. T., Souza, C. E., Rodrigues Neto, E. J., Linhares, A. X. (2006) Rickettsiae detection in *Amblyomma* ticks (Acari: Ixodidae) collected in the urban area of Campinas City, SP. *Revista da Sociedade Brasileira de Medicina Tropical*, **39** (1), 68–71.
- Estrada-Peña, A., Jongejan, F. (1999) Ticks feeding on humans: a review of records on human-biting Ixodoidea with special reference to pathogen transmission. *Experimental and Applied Acarology*, **23**, 685–715.
- Estrada-Peña, A., Osácar, J. J., Pichon, B., Gray, J. S. (2005) Hosts and pathogen detection for immature stages of *I. ricinus* (Acari: Ixodidae) in North-Central Spain. *Experimental and Applied Acarology*, **37**, 257–268.
- Estrada-Peña, A., Venzal, J. M. (2005) Factors affecting the distribution of the brown dog tick, *Rh. sanguineus* (Acari: Ixodidae) in an urban environment. In: *Proceedings of the 4th International Conference on Rickettsiae and Rickettsial Diseases*, Logroño, Spain, June, 26–29.
- Evstafyev, A. I., Pyshkin, V. B., Fish, T. S., Gromenko, V. M. (2005) Biodiversity and features of the distribution ixodidofauna (Acarina: Ixodidae) of the Crimean peninsula. In: *Biodiversity zoocenoses and role in natural and anthropogenic ecosystems*. Proceedings of the Third International Scientific Conference, Publishing DNU, 331–333 [In Russian].
- Eyo, J. E., Ekeh, F. N., Ivoke, N., Atama, C. I., Onah, I. E., Ezenwaji, N. E., Ikele, C. B. (2014) Survey of Tick Infestation of Cattle at Four Selected Grazing Sites in the Tropics. *Global Veterinaria*, **12** (4), 479–486.
- Fagir, D. M., El-Rayah, el-A. (2009) Parasites of the Nile rat in rural and urban regions of Sudan. *Integrative Zoology*, **4** (2), 179–187.
- Falco, R. C., Fish, D. (1988) Prevalence of *I. scapularis* (dammini) near the homes of Lyme disease patients in Westchester County, New York. *American Journal of Epidemiology*, **127** (4), 826–830.
- Farkas, R., Földvári, G. (2001) Examination of dogs' and cats' tick infestations in Hungary. *Magy Állatorvosok*, **123**, 534–539.
- Fedorov, V. G. (1968) About the attack ticks (Ixodidae) per person in Western Siberia. *Medical Parasitology and parasitic diseases*, **37**, 615–616 [In Russian].
- Fedorov, V. G., Nesterov, I. A., Gordienko, L. N. (1999) Ticks in Omsk suburbs. Environmental analysis. In: *Zoohygiene, prevention and therapy of diseases of livestock and domestic animals*, Novosibirsk, 31–32 [In Russian].
- Fedorova, I. A. (2012) The spatial structure of the population of ticks in urban areas. In: *Sakharov readings 2012: environmental problems of the XXI century*. Proceedings of the 12th international conference on May 17–18, 2012, Minsk, Belarus Minsk ISEU. Sakharov, 219 [In Russian].
- Fedorova, I. A. (2012) Effect of anthropogenic pressure on the state of populations of ticks on the territory of the landscape and recreational areas of Minsk. *Vesnik Mazyrskaga dzyarzhajna pedagagichnaga ŭniversiteta imya I. P. Shamyakina*, **34** (1), 50–54 [In Russian].
- Fedorova, I. A. (2013) Seasonal changes infestation of adults *Ixodes ricinus* l. borreliosis agents in an urbanizing. In: *Zoological reading. International scientific-practical conference dedicated to the memory of Professor I.K. Lopatin* (Grodno, 14–16 March 2013), 296–299 [In Russian].
- Fedorova, S. J. (2005) Ticks (Ixodidae) in Bishkek. *Medical Parasitology and parasitic diseases*, (4), 34–37 [In Russian].
- Fedorova, S. J. (2005) Ectoparasites of mammals and birds, Bishkek, and the regulation of their numbers. *Bulletin of Moscow Society of Naturalists. Department of Biology*, **110** (6), 54–58 [In Russian].
- Filstein, M. R., Benach, J. L., White, D. J., Brody, B. A., Goldman, W. D., Bakal, C. W., Schwartz, R. S. (1980) Serosurvey for human babesiosis in New York. *Journal of Infectious Diseases*, **141** (4), 518–521.
- Fingerle, V., Munderloh, U. G., Liegl, G., Wilske, B. (1999) Coexistence of ehrlichiae of the phagocytophila group with *Borrelia burgdorferi* in *I. ricinus* from Southern Germany. *Medical Microbiology and Immunology*, **188** (3), 145–149.
- Földvári, G., Farkas, R. (2005) Ixodid tick species attaching to dogs in Hungary. *Veterinary Parasitology*, **129**, 125–131.
- Földvári, G., Hell, É., Farkas, R. (2005) *Babesia canis canis* in dogs from Hungary: Detection by PCR and sequencing. *Veterinary Parasitology*, **127**, 221–226.
- Földvári, G., Jahfari, S., Rigó, K., Jablonszky, M., Szekeres, S., Majoros, G., Tóth, M., Molnár, V., Coipan, E. C., Sprong, H. (2014) Candidatus *Neoehrlichia mikurensis* and *Anaplasma phagocytophilum* in urban hedgehogs. *Emerging Infectious Diseases*, **20** (3), 496–498.
- Földvári, G., Márialigeti, M., Solymosi, N., Lukacs, Z., Majoros, G., Kósa, J. P., Farkas, R. (2007) Hard ticks infesting dogs in Hungary and their infection with *Babesia* and *Borrelia* species. *Parasitology Research*, **101**, 25–34.
- Földvári, G., Rigó, K., Jablonszky, M., Biró, N., Majoros, G., Molnár, V., Tóth, M. (2011) Ticks and the city: ectoparasites of the northern white-breasted hedgehog (*Erinaceus roumanicus*) in an urban park. *Ticks Tick Borne Disease*, (2), 231–234.
- Fox, I. (1950) The brown dog tick on rats in Puerto Rico. *Journal of Economic Entomology*, **43**, 722–723.
- Fox, M. T., Sykes, T. J. (1985) Establishment of the tropical dog tick, *Rh. sanguineus*, in a house in London. *Veterinary Record*, **116** (25), 661–662.
- Fu, Y., Liu, Z., Guan, G., Niu, Q., Li, Y., Yang, J., Ren, Q., Ma, M., Liu, A., Peng, Y., Luo, J., Yin, H. (2012) Development of Real-Time Polymerase Chain Reaction for Detection of *Borrelia burgdorferi* sensu lato in China. *Vector-borne and zoonotic diseases*, **12** (5), 341–345.
- Gabriel, M. W., Brown, R. N., Foley, J. E., Higley, J. M., Botzler, R. G. (2009) Ecology of *Anaplasma phagocytophilum* infection in gray foxes (*Urocyon cinereoargenteus*) in northwestern California. *Journal of Wildlife Diseases*, **45** (2), 344–354.
- Gaponov, S. P., Fedorov S. A., Budaeva, I. A. (2009) Ticks (Ixodidae) in Voronezh. *Bulletin of the University of Mordovia. Ser. Biological Sciences*, (1), 18–20 [In Russian].
- Gaponov, S. P., Fedorov S. A., Trankvilevsky, D. V. (2008) Bioecology ticks (Ixodidae) in Voronezh. *Bulletin of the Voronezh State University. Ser.: Chemistry. Biology. Pharmacy*, (2), 71–76 [In Russian].
- Gaponov, S. P., Solodovnikova, O. N., Fedorov, S. A. (2011) Ticks (Ixodidae) in urban areas of the Voronezh region in 2003–2009. *Bulletin of the Nizhny Novgorod University. Lobachevsky*, (2), Part 2, 45–51 [In Russian].
- Gaponov, S. P., Stekolnikov, A. A., Innocents, N., Fedorov, S. A. (2013) Changes in the number of *Ixodes* ticks and gamasid under antropopressii. *Bulletin of the Voronezh State University. Series: Chemistry. Biology. Pharmacy*, (1), 92–97 [In Russian].
- Gaponov, S. P., Trankvilevsky, D. V. (2008) Ticks Voronezh region as carriers of infectious agents in the XXI century. In: *Proceedings of*

- the IV All-Russian Congress of the Parasitological Society at the Russian Academy of Sciences *Parasitology in the XXI Century — Problems, methods, solutions*, **1**, 163–166 [In Russian].
- Garcia, M. V., Silva, D. C., Almeida, R. F. C., Cunha, R. C., Matias, J., Barros, J. C., Andreotti, R., Szabó, M. P. J. (2013) Environmentally associated ticks (Acari: Ixodidae) in Campo Grande, Mato Grosso do Sul, Brazil. *Revista Brasileira de Parasitologia Veterinária*, **22** (1), 124–128.
- Gargili, A., Ka, r S., Yilmazer, N., Cerit, Ç., Sönmez, G., Şahin, F., Alp, H. G., Vatansever, Z. (2010) Evaluation of Ticks Biting Humans in Thrace Province, Turkey. *Kafkas Üniversitesi Veteriner Fakültesi Dergisi Journal*, **16** (A), 141–146.
- Gasilin, V. V., Khakimzyanova, M. V., Tanenkova, E. V., Nugmanova, A. I., Karmazina, I. O. Ixodic ticks as the causative agents of natural focal infections, the current epidemiological situation of tick-borne encephalitis and ixodic tick-borne borreliosis (Lyme disease) in the republic of Tatarstan. *Basic research*, (7–1), 46–50 [In Russian].
- Gaxiola, C. S. M., Obregón, I. F., Quintero, M. M., Cabrera, V. I. A., Rubio, R. M. C. (1997) Prevalencia de *Rhipicephalus sanguineus* en canídeos de dos colonias de diferente nivel socio económico de Culiacán Sinaloa. In: *Proceedings of the 13th Congreso Latinoamericano de Parasitología*. La Habana, Cuba, November 17–23, 320.
- Gazyağci, S., Aşan, N., Demirbaş, Y. (2010) A common tortoise tick, *Hyalomma aegyptium* Linne 1758 (Acari: Ixodidae), identified on eastern hedgehog (*Erinaceus concolor* Martin 1838) in central Anatolia. *Turkish Journal of Veterinary and Animal Sciences*, **34** (2), 211–213.
- Gern, L., Rouvinez, E., Toutoungi, L. N., Godfroid, E. (1997) Transmission cycles of *Borrelia burgdorferi* sensu lato involving *I. ricinus* and *I. hexagonus* ticks in the European hedgehog, *Erinaceus europaeus*, in suburban and urban areas in Switzerland. *Folia Parasitologica*, **44**, 309–314.
- Georgiou, H., Belimenko, V. V., Hristianovsky, P. I. (2008) Babesiosis of dogs in the Orenburg region. *Veterinary Pathology*, (2), 56–58 [In Russian].
- Gilot, B., Immler, R., Moncada, E. (1973) Biotopes suburbains à *Dermacentor reticulatus* (Fabricius, 1794) (Ixodoidea). *Revue suisse de Zoologie*, **80**, 411–430.
- Gilot, B., Jarry, D., Pautou, G., Moncada, E., (1977) Biotopes suburbains à *Rhipicephalus turanicus* (Pomerancev, Matikasvili, Lototzki, 1940) (Acarina, Ixodoidea): étude préliminaire. *Annales de parasitologie humaine et comparée*, **52**, 353–362.
- Gilot, B., Laforge, M. L., Cabassu, J. P., Romani, M. (1992) Éléments pour la cartographie écologique des populations de *Rhipicephalus* du groupe sanguineus (Acariens, Ixodoidea) dans l'agglomération marseillaise, en relation avec les diverses formes d'urbanisation. *Acarologia*, **33**, 17–33.
- Gilot, B., Pautou, G. (1982) Evolution of populations of ticks (Ixodidae and Argasidae) in relation to artificialization of the environment in the French Alps. Epidemiologic effects. *Acta Tropica*, **39** (4), 337–354.
- Glatz, M., Muellegger, R. R., Hizo-Teufel, C., Fingerle, V. (2014) Low prevalence of *Borrelia bavariensis* in *Ixodes ricinus* ticks in southeastern Austria. *Ticks and Tick-borne Diseases*, **5** (6), 649–650.
- Glatz, M., Muellegger, R. R., Maurer, F., Fingerle, V., Achermann, Y., Wilske, B., Bloembergen, G. V. (2014) Detection of *Candidatus Neorhlichia mikurensis*, *Borrelia burgdorferi* sensu lato genospecies and *Anaplasma phagocytophilum* in a tick population from Austria. *Ticks Tick-Borne Disease*, **5**, 133–144.
- Glatz, M., Muellegger, R. R., Maurer, F., Fingerle, V., Achermann, Y., Wilske, B., Bloembergen, G. V. (2013) Detection of *Candidatus Neorhlichia mikurensis*, *Borrelia burgdorferi* sensu lato genospecies and *Anaplasma phagocytophilum* in a tick population from Austria. *Ticks Tick Borne Disease*, **5** (2), 139–144.
- Golubkova, A. A., Shashina, N. I., Dorogina, Yu. V. (2010) Lyme borreliosis as the actual problem of the megacity. *Disinfection case*, (1), 30–33 [In Russian].
- Golubkova, A. A., Sorokin, Yu., Korneev, A. S. (2012) Characteristics of the epidemic process of tick-borne encephalitis and tick-borne borreliosis in the combined focus of the territory of the city. path of infection. *Medical Almanac*, (3), 100–103 [In Russian].
- Goncharenko, V. I., Khomyakov, J. B., Medvedev, E. N. (2011) Entomological control of the ixodids in the city Kramatorsk. In: „Problems and evolution of the epidemic process of leading and parasitic infections present“ Abstracts Kharkiv, 183–184 [In Ukrainian].
- Gong, L., Liu, J., Han, W. (2013) Analysis on suspected cases of thrombocytopenia by fever in Yantai, Shandong. *Division Surveillance*, **28**, 17–19 [in Chinese].
- González-Acuña, D., Valenzuela, G., Moreno, L., Ardiles, K., Guglielmone, A. (2006) New hosts for the ticks *Amblyomma tigrinum* and *Rhipicephalus sanguineus* Acari: Ixodidae in Chile. *Archivos de Medicina Veterinaria*, **38** (3), 273–275.
- González-Acuña, D., Venzal, J. M., Guglielmone, A. A. (2003) Primer registro de *Rh. sanguineus* (Acarina: Ixodidae) en *Rattus norvegicus* (Mammalia: Rodentia) en Chile. *Gayana. Zoología*, **67**, 121–122.
- Gordeyko, N. S., Nikitin, A. Ya., Allenov, A. V., Zvereva, T. V. (2014) Stability of ticks' (Acari: Ixodidae) fauna associations on Russky island and in Ussuriysk national park (Primorsky Krai). *Far Eastern Journal of Infectious Pathology*, (25), 33–35 [In Russian].
- Gorgani-Firouzjaee, T., Pour-Reza, B., Naem, S., Tavassoli, M. (2013) Ectoparasitic infestations of the European hedgehog (*Erinaceus europaeus*) in Urmia city, Iran: First report. *Veterinary Research Forum*, **4** (3), 191–194.
- Goth, R. (1999) *Rh. sanguineus* (Ixodidae): frequency of infestation and ehrlichial infections transmitted by this tick in dogs in Germany: an epidemiological study and consideration. *Wiener Tierärztliche Monatsschrift*, **86**, 49–56.
- Goth, R., Hame, H. D. (1973) Epizootics due to *Rh. sanguineus* (Latreille 1806) in Germany. *Zentralbl Veterinarmed B*, **20** (4), 245–249.
- Goth, R. (1968) Zum Vorkommen von *Rh. sanguineus* (Latreille, 1806) in Deutschland. *Tropenmed Parasitol*, **19**, 305–307 [In German].
- Goth, R., Stendel, W., Holm, R. (1977) Zum Vorkommen von *Ixodes canisuga* Johnston, 1848, in Deutschland, ein Beitrag zur Ixodes-Fauna. *Parasitology Research*, **53**, 123–128 [In German].
- Goth, R., Wegerdt, S. (1991) Babesiosis of dogs in Germany: epidemiologic case analysis. *Tierärzte Prax*, **19** (2), 170–172.
- Götsch, S., Leschnik, M., Düscher, G., Burgstaller, J. P., Wille-Piazzai, W., Joachim, A. (2009) Ticks and haemoparasites of dogs from Praia, Cape Verde. *Veterinary Parasitology*, **166** (1–2), 171–174.
- Granström, M. (1997) Tick-borne zoonoses in Europe. *Clinical Microbiology and Infection*, **3** (2), 156–169.
- Gratz, N. G. (1999) Urbanization, arthropod and rodent pests, and human health. In: Robinson W. H., Rettich F., Rambo G. W. eds. *Proceedings of the 3rd International Conference on Urban Pests*. Czech University of Agriculture, Prague, 51–58.
- Gray, J. S., O. Kahl, C., Janetzki, Stein J. (1992) Studies on the ecology of Lyme disease in a deer forest in County Galway, Ireland. *Journal of Medical Entomology*, **29**, 915–920.
- Gray, J., Dantas-Torres, F., Estrada-Peña, A., Levin, M. (2013) Systematics and ecology of the brown dog tick, *Rh. Sanguineus*. *Ticks and Tick-borne Diseases*, **4** (3), 171–180.
- Gray, J. S., Kahl, O., Janetzki-Mann, C., Stein, J., Guy, E. (1994) Acquisition of *Borrelia burgdorferi* by *I. ricinus* ticks fed on the European hedgehog, *Erinaceus europaeus* L. *Experimental and Applied Acarology*, **18**, 485–491.
- Gray, J. S., Kirstein, F., Robertson, J. N., Stein, J., Kahl, O. (1999) *Borrelia burgdorferi* sensu lato in *I. ricinus* ticks and rodents in

- a recreational park in south-western. *Experimental and Applied Acarology*, **23**, 717–729.
- Greenfield, B. P. J. (2011) Environmental parameters affecting tick (*I. ricinus*) distribution during the summer season in Richmond Park, London. *Bioscience Horizons Advance Access published*, 1–9.
- Gritsun, T. S., Lashkevich, V. A., Gould, E. A. (2003) Tick-borne encephalitis. *Antiviral Research*, **57**, 129–146.
- Grzeszczuk, A., Stańczak, J., Kubica-Biernat, B., Racewicz, M., Kruminis-Łozowska, W., Prokopowicz, D. (2004) Human anaplasmosis in north-eastern Poland: seroprevalence in humans and prevalence in *I. ricinus* ticks. *Annals of Agricultural and Environmental Medicine*, **11**, 99–103.
- Guglielmone, A. A., Beati, L., Barros-Battesti, D. M., Labruna, M. B., Nava, S., Venzal, J. M., Mangold, A. J., Szabó, M. P. J., Martins, J. R., González-Acuña, D., Estrada-Peña, A. (2006) Ticks (Ixodidae) on humans in South America. *Experimental and Applied Acarology*, **40** (2), 83–100.
- Guglielmone, A. A., Mosa, S. G. (1991) Predation of ticks of the *Rh. sanguineus* (Latreille, 1806) group and *Boophilus microplus* (Canestrini, 1888) (Acari: Ixodidae) by *Nothura Temminck*, 1815 (Aves: Tinamidae) in Salta, Argentina. *Folia Parasitologica*, **38** (2), 114.
- Gunes, T., Engin, A., Poyraz, O., Elaldi, N., Kaya, S., Dokmetas, I., Bakir, M., Cinar, Z. (2009) Crimean-Congo Hemorrhagic Fever Virus in High-Risk Population, Turkey. *Emerging Infectious Diseases*, **15** (3), 461–464.
- Güneş, T., Poyraz, O., Kaya, S., Gençer, L., Alim, A. (2005) Investigation of vectors for *Borrelia burgdorferi* and Lyme seropositivity in Sivas region. *Mikrobiyoloji Bülteni*, **39** (4), 503–508.
- Guy, E. C., Farquhar, R. G. (1991) *Borrelia burgdorferi* in urban parks. *Lancet*, London. **338**, 1–253.
- Guznisheva, N. G., Gilmanov, A. A., Zakirov, I. G. (2013) Scientific substantiation of perfection of medical and preventive measures in natural foci of Ixodes tick borreliosis (according to the Udmurt Republic). *Kazan Medical Journal*, **94** (4), 517–522 [In Russian].
- Hackman, W. (1977) The tick *Rh. sanguineus* found in Finland (Acarina, Ixodidae). *Memories Soc. Fauna Flora Fenn*, **53**, 116.
- Haitlinger, B. (1986) Arthropod communities occurring on small mammals from ruin environment of urban agglomeration of Wrocław. *Acta Parasitologica Polonica*, **30** (28), 259–283.
- Hajdul, M., Zaremba, M., Karbowiak, G., Siński, E. (2006) Ryzyko zakażenia krętkami *Borrelia burgdorferi* s. l. w biotopach leśnych okolic Warszawy. In: Buczek A, Błaszak Cz, eds. *Stawonogi: znaczenie epidemiologiczne*. Lublin: Koliber, 195–203.
- Hajipour, N., Tavassoli, M., Gorgani-Firouzjaee, T., Naem, S., Pourreza, B., Bahrarnnejad, K., Arjmand J. (2015) Hedgehogs (*Erinaceus europaeus*) as a Source of Ectoparasites in Urban — suburban Areas of Northwest of Iran. *Journal of Arthropod-Borne Diseases*, **9** (1), 98–103.
- Hamel, D., Silaghi, C., Zapadynska, S., Kudrin, A., Pfister, K. (2013) Vector-borne pathogens in ticks and EDTA-blood samples collected from client-owned dogs, Kiev, Ukraine. *Ticks Tick Borne Disease*, **4** (1–2), 152–155.
- Hamer, S. A., Goldberg, T. L., Kitron, U. D., Brawn, J. D., Anderson, T. K., Loss, S. R., Walker, E. D., Hamer, G. L. (2012) Wild Birds and Urban Ecology of Ticks and Tick-borne Pathogens, Chicago, Illinois, USA, 2005–2010. *Emerging Infectious Diseases*, **18** (1), 1589–1595.
- Hamer, S. A., Lehrer, E., Magl, e S. B. (2012) Wild birds as sentinels for multiple zoonotic pathogens along an urban to rural gradient in greater Chicago, Illinois. *Zoonoses Public Health*, **59** (5), 355–364.
- Han, X., Aho, M., Vene, S., Peltomaa, M., Juseviciene, A., Leinikki, P., Vaheri, A., Vapalahti, O. (2001) TBE virus foci in Finland. In: *VIIth International Potsdam Symposium on Tick-borne Diseases* (IPS-VI) Thursday, April, 26th, 18.
- Hansford, K. M., Fonville, M., Jahfari, S., Sprong, H., Medlock, J. M. (2014) *Borrelia miyamotoi* in host-seeking *Ixodes ricinus* ticks in England. *Epidemiology & Infection*, **14**, 1–9.
- Hartelt, K., Oehme, R., Frank, H., Brockmann, S. O., Hassler, D., Kimmig, P. (2004) Pathogens and symbionts in ticks: prevalence of *Anaplasma phagocytophilum* (*Ehrlichia* sp.), *Wolbachia* sp., *Rickettsia* sp., and *Babesia* sp. in Southern Germany. *International Journal of Medical Microbiology*, **293** (37), 86–92.
- Heile, C., Heydorn, A. O., Schein, E. (2006) *Dermacentor reticulatus* (Fabricius, 1794)-distribution, biology and vector for *Babesia canis* in Germany. *Berliner und Münchener tierärztliche Wochenschrift*, **119** (7–8), 330–334.
- Heile, C., Hoffmann-Köhler, P., Wiemann, A., Schein, E. (2007) Transmission time of tick-borne diseases agents in dogs: *Borrelia*, *Anaplasma/Ehrlichia* and *Babesia*. *Der Praktische Tierarzt*, **88**, 584–590 [in German].
- Hekimoğlu, O., Özer, N. A. (2015) Distribution of hard tick species in Ankara, Turkey. *Turkish Journal of Zoology*, **39**, 256–262.
- Hercik, K., Hásová, V., Janeczek, J., Branny, P. (2007) Molecular evidence of Bartonella DNA in ixodid ticks in Czechia. *Folia Microbiologica*, **52** (5), 503–509.
- Hoffmann, G. (1981) Die Braune Hundezecke (*Rh. sanguineus* L.) in Berlin (West). *Epizootiologische Untersuchungen unter Einschaltung von Massenmedien. Bundesgesundheitsblatt*, **24**, 153–163 [in German].
- Hofmann-Lehmann, R., Meli, M. L., Dreher, U. M., Gonczi, E., Deplazes, P., Braun, U., Engels, M., Schupbach, J., Jorger, K., Thoma, R., Griot, C., Stark, K. D., Willi, B., Schmidt, J., Kocan, K. M., Lutz, H. (2004) Concurrent infections with vector-borne pathogens associated with fatal hemolytic anemia in a cattle herd in Switzerland. *Journal of Clinical Microbiology*, **42**, 3775–3780.
- Hogsette, J. A. (2015) United States Department of Agriculture—Agricultural Research Service research on veterinary pests. *Pest Management Science*, **59**, 835–841.
- Hooker, W. A., Bishopp, F. C., Wood H. P. (1912) The life history and bionomics of some North American ticks. *U. S. Dep't of Agriculture, Bur. of Entomology Bull.* (106), Washington Government printing office, 1–239.
- Horak, G. I. (1995) Ixodid ticks collected at the Faculty of Veterinary Science, Onderstepoort, from dogs diagnosed with *Babesia canis* infection. *South African Veterinary Association*, **66**, 170–171.
- Hornok, S., Csörgő, T., de la Fuente, J., Gyuranecz, M., Privigyei, C., Meli, M. L., Kreizinger, Z., Gönczi, E., Fernández de Mera, I. G., Hofmann-Lehmann, R. (2013) Synanthropic birds associated with high prevalence of tick-borne rickettsiae and with the first detection of *Rickettsia aeschlimannii* in Hungary. *Vector Borne Zoonotic Disease*, **13** (2), 77–83.
- Hornok, S., Farkas, R. (2005) First autochthonous case of dogs with *Rh. sanguineus* (Acari: Ixodidae) in Hungary: case report and review of current knowledge of this tick species. *Magyar Allatorvosok Lapja*, **127**, 623–629.
- Hornok, S., Meli, M. L., Gönczi, E., Halász, E., Takács, N., Farkas, R., Hofmann-Lehmann, R. (2014) Occurrence of ticks and prevalence of *Anaplasma phagocytophilum* and *Borrelia burgdorferi* s. l. in three types of urban biotopes: Forests, parks and cemeteries. *Ticks Tick Borne Disease*, Jul 22. pii: S1877–959X (14)00143–5.
- Hovius, K. E., Beijer, B., Rijpkema, S. G., Bleumink-Pluym, N. M., Houwers, D. J. (1998) Identification of four *Borrelia burgdorferi* sensu lato species in *I. ricinus* ticks collected from Dutch dogs. *Veterinary Question*, **20** (4), 143–145.
- Hristianovsky, P. I. (2000) Ticks — carriers of piroplasmosis in Orenburg. In: *Proceedings and materials of the IV Regional Conference „The fauna of the Southern Urals and the Northern Caspian“*. Orenburg, ed. OGAU, 143–144 [In Russian].
- Hristianovsky, P. I. (2004) Laws of formation of habitats of ticks and natural foci of piroplasmosis in urban areas. *Bulletin OSU*, (12), 117–120 [In Russian].

- Hristianovsky, P. I., Belimenko, V. V. (2004) Ticks in a modern city. *Veterinary*, (4), 33–34 [In Russian].
- Hristianovsky, P. I., Belimenko, V. V. (2008) Babesiosis of dogs in a modern city. *Proceedings of the Orenburg State Agrarian University*, **2** (18–1), 105–106 [In Russian].
- Hristianovsky, P. I., Bystrov, V. I. (2004) The dynamics of the territories on the well-being of animals piroplasmosis depending on changes in the environmental situation in the Orenburg region. *Proceedings of the Orenburg State Agrarian University*, **2** (2–1), 145–146 [In Russian].
- Hubálek, Z., Halouzka, J., Juřicová, Z. (1993) Prevalence of *Borrelia* in *I. ricinus* ticks from urban parks. *Folia Parasitologica*, **40**, 236.
- Hulinska, D., Votycka, J., Kriz, B., Holinkova, N., Novakova, J., Hulinsky, V. (2007) Phenotypic and genotypic analysis of *Borrelia* spp. isolated from *Ixodes ricinus* ticks by using electrofortic chips and real-time polymerase chain reaction. *Folia Microbiologica*, **52** (4), 315–324.
- Hun, L., Troyo, A., Taylor, L., Barbieri, A. M., Labruna, M. B. (2011) First report of the isolation and molecular characterization of *Rickettsia amblyommii* and *Rickettsia felis* in Central America. *Vector Borne Zoonotic Disease*, **11** (10), 1395–1397.
- Hunter, W. D., Hooker, W. A. (1907) Information concerning the North American fever tick, with notes on other species. *United States, Department of Agriculture Bureau of Entomology Bulletin*, (72), 1–87.
- Huschuk, I. V., Kostyuk, A. I. (2013) Lyme disease as an environmental issue of Western Ukraine (for example, Rivne and Lviv regions). In: *Proceedings of the Conference „Environment and Health“* (25–26 April 2013) TDMU Ukrmedknyha Ternopil, 57–58 [In Ukrainian].
- Ijdo, J. W., Meek, J. I., Carter, M. L., Magnarelli, L. A., Wu, C., Tenuta, S. W., Fikrig, E., Ryder, R. W. (2000) The emergence of another tickborne infection in the 12-town area around Lyme, Connecticut: human granulocytic ehrlichiosis. *Journal of Infectious Diseases*, **181** (4), 1388–1393.
- Ijdo, J. W., Wu, C., Magnarelli, L. A., Stafford, K. C 3rd., Anderson, J. F., Fikrig E. (2000) Detection of *Ehrlichia chaffeensis* DNA in *Amblyomma americanum* ticks in Connecticut and Rhode Island. *Journal of Clinical Microbiology*, **38** (12), 4655–4656.
- Inayoshi, M., Naitou, H., Kawamori, F., Masuzawa, T., Ohashi, N. (2004) Characterization of *Ehrlichia* species from *Ixodes ovatus* ticks at the foot of Mt. Fuji, Japan. *Microbiology and Immunology*, **48** (10), 737–745.
- Inokuma, H., Yamamoto, S., Morita C. (1998) Survey of tick-borne diseases in dogs infested with *Rhipicephalus sanguineus* at a kennel in Okayama Prefecture, Japan. *Acad Sci Hebd Seances Acad Sci Discipline*, **60** (6), 761–763.
- Iqbal, A., Sajid, M. S., Khan, M. N., Khan, M. K. (2013) Frequency distribution of hard ticks (Acari: Ixodidae) infesting bubaline population of district Toba Tek Singh, Punjab, Pakistan. *Parasitology Research*, **112** (2), 535–541.
- Ivanova, L. M. (1984) Modern Epidemiology natural focal infections in the Russian Federation. *Medical Parasitology and parasitic diseases*, (2), 17–21 [In Russian].
- Iwakami, S., Ichikawa, Y., Inokuma, H. (2011) A nationwide survey of ixodid tick species recovered from domestic dogs and cats in Japan in 2011. *Ticks Tick Borne Disease*, **5** (6), 771–779.
- Janecek, E., Mietze, A., Goethe, R., Schnieder, T., Strube, C. (2012) *Bartonella* spp. Infection Rate and *B. grahamii* in Ticks. *Emerging Infectious Diseases*, **18** (10), 1689–1690.
- Janisch, M. (1986) Dermacentor pictus tick species as the vector of Babesia canis in Hungary. *Magy Állatorvosok*, **41**, 310–312.
- Janko, N. V., Yatsyna, M. D., Hnatiuk, O. J., Gavryshchuk, V. I., Bondarska, O. A. (2011) Epidemiological harketyrystyka natural foci of tularemia and encephalitis in Volyn region with the analysis of factors and their activity. In: *Problems and evolution of the epidemic process of leading and parasitic infections present*. Abstracts Kharkiv, 65–66 [In Ukrainian].
- Jennett, A. L., Smith, F. D., Wall, R. (2013) Tick infestation risk for dogs in a peri-urban park. *Parasit&Vectors*, **17** (6), 358. <http://www.parasitesandvectors.com/content/6/1/358>
- Jiang, B. G., Cao, W. C., Niu, J. J., Wang, J. X., Li, H. M., Sun, Y., Yang, H., Richadus, J. H., Habbema, J. D. (2011) Detection and identification of *Ehrlichia* species in *Rhipicephalus (Boophilus) microplus* ticks in cattle from Xiamen, China. *Vector Borne and Zoonotic Diseases* (Larchmont, N. Y.), 265–272.
- Jiang, B. G., Cao, W. C., Niu, J. J., Wang, J. X., Li, H. M., Sun, Y., Yang, H., Richadus, J. H., Habbema, J. D. (2011) Detection and identification of *Ehrlichia* species in *Rhipicephalus (Boophilus) microplus* ticks in cattle from Xiamen, China. *Vector Borne Zoonotic Disease*, **11** (3), 325 doi: 10.1089/vbz. 2009.0219. Epub 2011 Jan 18.
- Jin, X. Z., Guo, F., Liu, X. H. (2009) Detection of *Ehrlichia* in ticks in Suizhou city of Hubei province, China. *Zhonghua Liu Xing Bing Xue Za Zhi*, **30** (11), 1210–1211.
- Jobe, D. A., Lovrich, S. D., Nelson, J. A., Velat, T. C., Anchor, C., Koeune, T., Martin, S. A. Jr. (2006) *Borrelia burgdorferi* in *I. scapularis* (dammini) ticks, Chicago area. *Emerging Infectious Diseases*, **12** (6), 1039–1041.
- Jobe, D. A., Nelson, J. A., Adam, M. D., Martin, S. A. Jr. (2007) Lyme disease in urban areas, Chicago. *Emerging Infectious Diseases*, **13** (11), 1799–1800.
- Jongejan, F., Uilenberg, G. (2004) The global importance of ticks. *Parasitology*, **129**, 3–14.
- Jouda, F., Crippa, M., Perret, J.-L., Gern, L. (2003) Distribution and prevalence of *Borrelia burgdorferi* sensu lato in *Ixodes ricinus* ticks of Canton Ticino (Switzerland). *European Journal of Epidemiology*, **18** (9), 907–912.
- Junttila, J., Peltomaa, M., Soini, H., Marjamäki, M., Viljanen, M. K. (1999) Prevalence of *Borrelia burgdorferi* in *Ixodes ricinus* Ticks in Urban Recreational Areas of Helsinki. *Journal of Clinical Microbiology*, **37** (5), 1361–1365.
- Kalyagin, Yu. S., Zubko, K. S., Efremova, G. V. (2010) Ixodidae ticks in Kemerovo and the ways of their entry to the city territory: experience of theoretic research. *Bulletin KemSU*, **42** (2) [In Russian].
- Kahl, O., Radda, A. C. (1988) Occurrence of tick-borne encephalitis (TBE) virus in Berlin (West). *Zentralbl Bakteriell Mikrobiol Hyg A*, **268** (4), 482–486.
- Kahl, O., Schmidt, K., Schönborg, A., Laukamm-Josten, U., Knülle, W., Bienzle, U. (1989) Prevalence of *Borrelia burgdorferi* in *I. ricinus* ticks in Berlin (West). *Zentralbl Bakteriell Mikrobiol Hyg A*, **270** (3), 434–440.
- Kahl, O., Stein, J., Janetzki, C., Radda, A., Knülle, W. (1992) Occurrence of the tick *I. ricinus* in Berlin and its role as carrier of *Borrelia burgdorferi* and the tick-borne encephalitis (TBE)-Virus. *Zentralbl Bakteriell Mikrobiol Hyg A*, **325**, 44.
- Kar, S., Dervis, E., Akın, A., Ergonul, O., Gargili, A. (2013) Preferences of different tick species for human hosts in Turkey. *Experimental and Applied Acarology*, **61** (3), 349–55.
- Karbowiak, G. (2004) Zoonotic reservoir of Babesia microti in Poland. *Polish Journal of Microbiology*, **53**, 61–5.
- Karbowiak, G., Siuda, K. (2001) Występowanie kleszcza pospolitego *Ixodes ricinus* (Acari: Ixodida) na terenach rekreacyjnych dużych aglomeracji miejskich w Polsce i jego znaczenie epidemiologiczne. In: Indykiewicz P., Barczak T., Kaczorowski G. eds. *Bioróżnorodność i ekologia populacji zwierzęcych w środowiskach zurbanizowanych*. Bydgoszcz: NICE, 150–154.
- Karpov, S. P. (1956) Tomsk center encephalitis and measures to eliminate it. *Trudy Tomsk NIIVS*, **7**, 7–11 [In Russian].
- Karpov, S. P. (1959) Questions of formation and elimination of foci of tick-borne encephalitis in inhabited areas. *Reports of the meetings on the biology*, 266–269 [In Russian].
- Karpov, S. P. (1963) The main results of the study of the epidemiology of tick-borne encephalitis and control of the outbreak in Tomsk. *Trudy Tomsk NIIVS*, **14** [In Russian].

- Karpov, S. P. (1965) Tomsk center encephalitis and matters of its improvement. In: *Tick-borne encephalitis*, Tomsk, 212–221 [In Russian].
- Karpov, S. P., Yavya, A. R., Kulikov, A. G. (1961) Further studies on the epidemiology of TBE Tomsk hearth. *Epidemiology, microbiology and immunology*, 31–35 [In Russian].
- Kartashov, S., Ermakov, A. M., Mironov, A. A., Minoransky, V. A., Kazadaev, A. A. (2011) Epizootichesky features tick-borne infections of dogs and their vectors in the Rostov region. *Proceedings of the higher educational institutions. North Caucasus region. Series: Science*, (1), 65–67 [In Russian].
- Katargina, O., Geller, J., Alekseev, A., Dubinina, H., Efremova, G., Mishaeva, N., Vasilenko, V., Kuznetsova, T., Järvekülg, L., Vene, S., Lundkvist, A., Golovljova, I. (2012) Identification of *Anaplasma phagocytophilum* in tick populations in Estonia, the European part of Russia and Belarus. *Clinical Microbiology and Infection*, **18** (1), 40–46.
- Kawahara, M., Ito, T., Suto, C., Shibata, S., Rikihisa, Y., Hata, K., Hirai, K. (1999) Comparison of *Ehrlichia muris* strains isolated from wild mice and ticks and serologic survey of humans and animals with *E. muris* as antigen. *Journal of Clinical Microbiology*, **37** (4), 1123–1129.
- Kazarina, E. V. (2003) *Piroplasmosis dogs of urban population (epizootic situation, some aspects of the pathogenesis, diagnosis and treatment)*. Author. dis. cand. vet. science, Stavropol, 1–24 [In Russian].
- Kelly, P. J., Mason, P. R. (1991) Tick-bite fever in Zimbabwe. Survey of antibodies to Rickettsia conorii in man and dogs, and of rickettsia-like organisms in dog ticks. *South African Medical Journal*, **80** (5), 233–236.
- Kernif, T., Socolovschi, C., Boudebouch, N., Raoult, D., Parola, P., Wells, K., Lakim, M. B., Inthald, S., Slesak, G., Beaucournu, J. C., Newton, P. N. (2012) Bartonella and rickettsia in arthropods from the lao pdr and from Borneo, Malaysia. *Comparative Immunology, Microbiology & Infectious Diseases*, **35** (1), 51–57.
- Kharitononkov, I. G., Masuzawa, T., Okamoto, I., Fukui, T., Trifonov, I. V., Reznikov, Iu. P., Rumiantsev, A. G. (2009) Assessment of rate of infection with agents of bacterial infections in ticks captured on one of the Moscow park terrains. *Zhurnal mikrobiologii, epidemiologii, i immunobiologii*, (3), 14–17 [In Russian].
- Kia, E., Moghddas-Sani, H., Hassanpoor, H., Vatandoost, H., Zahabian, F., Akhavan, A., Hanafi-Bojd, A., Telmadarraiy, Z. (2009) Ectoparasites of rodents captured in bandar abbas, southern Iran. *Iran J Arthropod Borne Disease*, **3** (2), 44–49.
- Kidov, A. A., Timoshina, A. L., Matushkina, K. A., Kobrin, E. G. (2013) Parasitism European forest tick, *I. ricinus* (Linnaeus, 1758) (Acari, Parasitiformes: Ixodidae) on the lizard Brauner, *Darevskia braueri* (Mehely, 1909) (Reptilia, Sauria: Lacertidae). *Bulletin of the Buryat State University*, **4**, 165–166 [In Russian].
- Kiewra, D., Dobracki, W., Lonc, E., Dobracka, B. (2007) Zagrożenie boreliozą z Lyme na Dolnym Śląsku. In: Buczek A, Błaszczak Cz, eds. *Stawonogi: interakcje pasożyt-żywicieli*. Lublin: Koliber, 201–206.
- Kiewra, D., Kryza, M., Szymanowski, M. (2014) Influence of selected meteorological variables on the questing activity of *Ixodes ricinus* ticks in Lower Silesia, SW Poland. *Journal of Vector Ecology*, **39** (1), 138–145.
- Kiewra, D., Lonc, E. (2004) Biology of *I. ricinus* (L.) and its pathogens in Wrocław area. *Wiadomości parazytologiczne*, **50**, 259–264.
- Kiewra, D., Stańczak, J., Richter, M. (2014) *Ixodes ricinus* ticks (Acari, Ixodidae) as a vector of *Borrelia burgdorferi* sensu lato and *Borrelia miyamotoi* in Lower Silesia, Poland — Preliminary study. *Ticks Tick Borne Disease*, **5** (6), 892–897.
- Kiewra, D., Zalesny, G., Czulowska, A. (2014) The Prevalence of *Anaplasma phagocytophilum* in Questing *Ixodes ricinus* Ticks in SW Poland. *Polish Journal of Microbiology*, **63** (1), 89–93.
- Kim, B. J., Kim, H., Won, S., Kim, H. C., Chong, S. T., Klein, T. A., Kim, K. G., Seo, H. Y., Chae, J. S. (2014) Ticks collected from wild and domestic animals and natural habitats in the republic of Korea. *Korean Journal of Parasitology*, **52** (3), 281–285.
- Kim, C. M., Yi, Y. H., Yu, D. H., Lee, M. J., Cho, M. R., Desai, A. R., Shringi, S., Klein, T. A., Kim, H. C., Song, J. W., Baek, L. J., Chong, S. T., O'guinn, M. L., Lee, J. S., Lee, I. Y., Park, J. H., Foley, J., Chae, J. S. (2006) Tick-Borne Rickettsial Pathogens in Ticks and Small Mammals in Korea. *Applied and Environmental Microbiology*, **72** (9), 5766–5776.
- Kim, H. C., Han, S. H., Chong, S. T., Klein, T. A., Choi, C. Y., Nam, H. Y., Chae, H. Y., Lee, H., Ko, S., Kang, J. G., Chae, J. S. (2011) Ticks collected from selected mammalian hosts surveyed in the Republic of Korea during 2008–2009. *Korean Journal of Parasitology*, **9** (3), 331–335.
- Kjemtrup, A. M., Wainwright, K., Miller, M., Penzhorn, B. L., Carreno, R. A. (2006) *Babesia conradae*, sp. nov., a small canine *Babesia* identified in California. *Veterinary Parasitology*, **138** (1–2), 103–111.
- Klimpel, S., Heukelbach, J., Pothmann, D., Rückert, S. (2010) Gastrointestinal and ectoparasites from urban stray dogs in Fortaleza (Brazil): high infection risk for humans? *Parasitology Research*, **107** (3), 713–719.
- Koc, S., Aydın, L., Cetin, H. (2015) Tick species (Acari: Ixodida) in Antalya City, Turkey: species diversity and seasonal activity. *Parasitology Research*, **114** (7), 2581–2586.
- Koch, H. G. (1982) Seasonal incidence and attachment sites of ticks (Acari: Ixodidae) on domestic dogs in southeastern Oklahoma and northwestern Arkansas, USA. *Journal of Medical Entomology*, **19**, 293–298.
- Koči, J., Movila, A., Taragel'ová, V., Toderas, I., Uspenskaia, I., Derdákova, M., Labuda, M. (2007) First report of *Anaplasma phagocytophilum* and its co-infections with *Borrelia burgdorferi* sensu lato in *I. ricinus* ticks (Acari: Ixodidae) from Republic of Moldova. *Experimental and Applied Acarology*, **41**, 147–152.
- Kocianova, E., Rehacek, J., Vyrostekova, V., Gern, L., Hu, C. M. (1999) Genetic diversity of borrelia burgdorferi sensu lato isolates obtained from *Ixodes ricinus* ticks collected in Slovakia. *European Journal of Epidemiology*, **15** (7), 665–669.
- Komolov, N. S., Zablocki, V. R., Nureyev, A. D., Amirbayov, M., Kashka, N. A. (2007) Tick-borne situation in the area of Northern Tajikistan (species composition tick vectors, seasonality parasitism degree zakleschevannosti) unfavorable for anaplasmosis and piroplasmosis cattle. *Veterinary Pathology*, (2), 224–227 [In Russian].
- Komon, T., Sytykiewicz H. (2007) Occurrence of *Borrelia burgdorferi* s. l. in selected *Ixodes ricinus* populations within Nadbuzanski Landscape Park. *Wiadomości Parazytologiczne*, **53**, 309–317.
- Kondratiev, V. G., Istratkina, S. V., Zhukov, L. A., Adamovich, G. G. (2001) Evaluation of areas of recreation zone in Tomsk in relation to the risk of infection of *Ixodes* tick-borne encephalitis and Lyme borreliosis. In: *Actual problems of infectious pathology and parasitology*, Tomsk, 110–111 [In Russian].
- Konkova-Rejzman, A. B., Zlobin, V. I. (2012) The specific and nonspecific prevention and tick-borne encephalitis and *Ixodes* tick borreliosis in the southern Urals. *Siberian Medical Journal (Irkutsk)*, **111** (4), 71–74 [In Russian].
- Korenberg, E. I. (1983) *What is the natural foci?* Moscow, Knowledge 1–64 [In Russian].
- Korenberg, E. I., Kovalevskii, Yu. V. (1999) Main features of tick borne encephalitis eco — epidemiology in Russia. *Zbl. Fur Bakterien*, (289), 525–539.
- Korenberg, E. I., Nefedova, V. V., Romanenko, V. N., Gorelova, N. B. (2010) The tick *Ixodes pavlovskiy* as a host of spirochetes pathogenic for humans and its possible role in the epizootiology and epidemiology of borrelioses. *Vector Borne Zoonotic Disease*, **10** (5), 453–458.
- Korenberg, E. I., V. Cerny, Daniel, M. (1984) Occurrence of Ixodid ticks-the main vectors of tick-borne encephalitis virus in urbanized territory. *Folia Parasitologia*, **31**, 365–370.

- Korotkov, Iu. S., Kislenco, G. S., Burenkova, L. A., Rudnikova, N. A., Karan', L. S. (2008) Spatial and temporal variability of *I. ricinus* and *Ixodes persulcatus* infection with the Lyme disease agent in Moscow Regi. *Parazitologiya*, **42** (6), 441–451 [In Russian].
- Kosheleva, M. I., Kudinov, O. V., Prokofiev, E. V. Molchanov, I. A., Soshenko, L. P. (2002) To epizootology babesiosis of dogs in Moscow and the Moscow region. *Journal of Veterinary Medicine*, **24** (3), 32–33 [In Russian].
- Koshkina, N. A., Kolesnikov, V. I., Vasil, M. N. (2014) Ixodefauna of the city of Stavropol. *Russian parasitological magazine*, (1), 7–8 [In Russian].
- Kosik-Bogacka, D., Kuźna-Grygiel, W., Bukowska, K. (2004) The prevalence of spirochete *Borrelia burgdorferi* sensu lato in ticks *I. ricinus* and mosquitoes *Aedes* spp. within a selected recreational area in the city of Szczecin. *Annals of Agricultural and Environmental Medicine*, **11** (1), 105–108.
- Kovaleva, E. P., Lysenko, A. Y., Nikitin, D. P. (1982) *Urbanisation and problems of epidemiology*. Medicine, Moscow, 1–174 [In Russian].
- Kozhevnikova, N. V., Voronov, G. M., Golubev, E. M., Karavanskaya, T. N., Ott, V. A. (2007) The spatial structure infections transmitted by ticks in the Khabarovsk Territory. *Far Journal of Infectious Pathology*, (11), 71–79 [In Russian].
- Kozuch, O., Nosek, J., Ernek, E., Lichard, M., Albrecht, P. (1963) Persistence of tick-borne encephalitis virus in hibernating hedgehogs and dormice. *Acta Virologica*, **7**, 430–433.
- Krämer, F., Schaper, R., Schunack, B., Polozowski, A., Piekarska, J., Szwedko, A., Jodies, R., Kowalska, D., Schüpbach, D., Pantchev, N. (2014) Serological detection of *Anaplasma phagocytophilum*, *Borrelia burgdorferi* sensu lato and *Ehrlichia canis* antibodies and *Dirofilaria immitis* antigen in a countrywide survey in dogs in Poland. *Parasitology Research*, **113** (9), 3229–3239.
- Krawczak, F. S., Nieri-Bastos, F. A., Nunes, F. P., Soares, J. F., Moraes-Filho, J., Labruna, M. B. (2014) Rickettsial infection in *Amblyomma cajennense* ticks and capybaras (*Hydrochoerus hydrochaeris*) in a Brazilian spotted fever-endemic area. *Parasites Vectors*, **7**, 7 (5 January 2014) <http://www.parasitesandvectors.com/content/7/1/7>
- Krawczyk, A. I., van Leeuwen, A. D., Jacobs-Reitsma, W., Wijnands, L. M., Bouw, E., Jahfari, S., van Hoek, A. H., van der Giessen, J. W., Roelfsema, J. H., Kroes, M., Kleve, J., Dullemon, Y., Sprong, H., de Bruin, A. (2015) Presence of zoonotic agents in engorged ticks and hedgehog faeces from *Erinaceus europaeus* in (sub) urban areas. *Parasit & Vectors*, **8**, 210. doi: 10.1186/s13071-015-0814-5.
- Krčmar, S., Ferizbegović, J., Lonić, E., Kamberović, J. (2014) Hard tick infestation of dogs in the Tuzla area (Bosnia and Herzegovina). *Veterinarski arhiv*, **84** (2), 177–182.
- Krčmar, S., Vereš, M., Trilar T. (2014) Fauna of hard ticks (Acari: Ixodidae) in different habitats in Croatian part of Baranja. *J. Forestry S. Croatia (Šumarski list)*, **38** (5–6), 309–314.
- Król, N., Kiewra, D., Szymanowski, M., Lonc, E. (2015) The role of domestic dogs and cats in the zoonotic cycles of ticks and pathogens. Preliminary studies in the Wrocław Agglomeration (SW Poland). *Veterinary Parasitology*, **214** (1–2), 208–212.
- Kubiak, K., Dziekońska-Rynko, J., Jabłonowski, Z. (2004) Occurrence and seasonal activity of *I. ricinus* (Linnaeus, 1758) ticks in the forest areas of Olsztyn. *Wiadomości Parazytologiczne*, **50**, 265–268.
- Kubiak, K., Dziekońska-Rynko, J. (2006) Seasonal activity of the common European tick, *I. ricinus* (Linnaeus, 1758), in the forested areas of the city of Olsztyn and its surroundings. *Wiadomości Parazytologiczne*, **52** (1), 59–64.
- Kutrkyn, A. V. (2009) Effect of transformation urbanohennoy environment habitat on blood-sucking ectoparasites mlekopytaysykh crayons. *Scientists note Kazan University Series, Estestvennye Science*, **151** (2), 132–144 [In Russian].
- Kuznetsov, V. N., Bondarev, V. Y. (2007) Distribution of ticks (Ixodidae) in the Luhansk region. In: *Biodiversity and role of animals in ecosystems*. Materials of IV International Conference. Dnepropetrovsk, Publisher DNU, 343 [In Russian].
- Kwak, Y. S., Kim, T. Y., Nam, S. H., Lee, I. Y., Kim, H. P., Mduma, S., Keyyu, J., Fyumagwa, R., Yong, T. S. (2014) Ixodid tick infestation in cattle and wild animals in Maswa and Iringa, Tanzania. *Korean Journal of Parasitology*, **52** (5), 565–568.
- Labruna, M. B., Horta, M. C., Aguiar, D. M., Cavalcante, G. T., Pinter, A., Gennari, S. M., Camargo, L. M. (2007) Prevalence of infection in dogs from the urban and rural areas of Monte Negro municipality, western Amazon, Brazil. *Rickettsia Vector Borne Zoonotic Disease*, **7** (2), 249–255.
- Labruna, M. B., Ribeiro, A. F., Cruz, M. V., Camargo, L. M., Camargo, E. P. (2002) Gynandromorphism in *Amblyomma cajennense* and *Rhipicephalus sanguineus* (Acari: Ixodidae). *Journal of Parasitology*, **88** (4), 810–811.
- Lako, B., Dmitrović, R., Drndarević, D., Nanušević, N., Lazarević, N., Obradović, M., Đorđević D. (1998) Our first experiences with serological diagnosis of Lyme disease“, In: *IX jugoslovensko-italijanski sastanak o zaraznim bolestima*, Beograd, Abstracts, 45.
- Leschnik, M. W., Khanakah, G., Stanek, G., Düscher, G., Wille-Piazzai, W., Joachim, A., Hörweg, C. (2012) Species, developmental stage and infection with microbial pathogens of engorged ticks removed from dogs and questing ticks. *Medical & Veterinary Entomology*, **26** (4), 440–446.
- Lewis, D. C., Meyere, K. M., Callan, M. B., Bucheler, J., Geger, U. (1995) Detection of platelet-bound and serum platelet-bindable antibodies for diagnosis of idiopathic thrombocytopenic purpura in dogs. *American Veterinary Medical Association*, **206** (1), 47–52.
- Li, S., Heyman, P., Cochez, C., Simons, L., Vanwambeke, S. O. (2012) A multi-level analysis of the relationship between environmental factors and questing *I. ricinus* dynamics in Belgium. *Parasites & Vectors*, **5**, 149. <http://www.parasitesandvectors.com/content/5/1/149/>
- Liebisch, A., Brandes, R., Hoppenstedt, K. (1984) Zum Befall von Hunden und Katzen mit Zecken und Flöhen in Deutschland. *Praktische Tierarzt*, **66**, 817–827.
- Liebisch, A., Brandes, R., Hoppenstedt, K., 1985. Tick and flea infections of dogs and cats in the German Federal Republic. *Praktische Tierarzt*, **66**, 817–824 [in German].
- Lim, S., Irwin, P. J., Lee, S., Oh, M., Ahn, K., Myung, B., Shin, S. (2010) Comparison of selected canine vector-borne diseases between urban animal shelter and rural hunting dogs in Korea. *Parasites & Vectors*, **3** (1), 32. <http://www.parasitesandvectors.com/content/3/1/32>
- Little, S. E., Beall, M. J., Bowman, D. D., Chandrashekar, R., Stamaris, J. (2014) Canine infection with *Dirofilaria immitis*, *Borrelia burgdorferi*, *Anaplasma* spp., and *Ehrlichia* spp. in the United States, 2010–2012. *Parasites & Vectors*, **7**, 257. <http://www.parasitesandvectors.com/content/7/1/257>
- Liu, J.-q., Guo, X., Gao, P., Wang, H., Wang, B. (2013) Preliminary investigation on the invasion situation of ticks for the different hosts in Anyang and Hebi areas. *Chinese Journal of Hygienic Insecticides & Equipments*, (03), 59–61
- Liu, Y., Huang, X. Y., Du, Y. H., Wang, H. F., Xu, B. L. (2012) Survey on ticks and detection of new bunyavirus in some vect in the endemic areas of fever, thrombocytopenia and leukopenia syndrome (FTLS) in Henan province. *Chinese Journal of Preventive Medicine*, **46** (6), 500–504 [In Chinese].
- Liu, Y., Huang, X. Y., Du, Y. H., Wang, H. F., Xu, B. L. (2012) Survey on ticks and detection of new bunyavirus in some vect in the endemic areas of fever, thrombocytopenia and leukopenia syndrome (FTLS) in Henan province. *Chinese Journal of Preventive Medicine*, **46** (6), 500–504 [In Chinese].
- Liyanaarachchi, D. R., Rajakaruna, R. S., Dikkumbura, A. W., Rajapakse, R. P. (2015) Ticks infesting wild and domestic animals and humans of Sri Lanka with new host records. *Acta Tropica*, **142**, 64–70.
- Lonc, E., Buczek, A., Kiewra, D., Ciosek, K. (2001) The occurrence of ticks *I. ricinus* (L.) on Ślęza (Lower Silesia). In: Buczek A, Błaszczak CZ. eds. *Arthropods. Parasites and Hosts*. KGM Lublin, Polish), 87–92.

- Lonc, E.; Kiewra, D.; Rydzanicz, K.; Król, N. (2011) The risk of arthropod vector configuration in Europe. *Wiadomości Parazytologiczne*, **57** (4), 223–232.
- López, J., Abarca, K., Mundaca, M. I., Caballero, C., Valiente-Echeverría, F. (2012) Molecular identification of *Ehrlichia canis* in a dog from Arica, Chile. *Revista chilena de infectología*, **29** (5), 527–530.
- Lopatina, Yu. V., Petrova, A. D., Timoshkov, V. V. (1998) Mites of small mammals from parks and ruderal areas of Moscow. *Parasitology*, **32** (2), 118–128.
- Lozynski, I., Biletska, H., Semenyshyn, O., Fedoruk, V., Drul, O., Ben, I., Shulgan, A., Morochkovski, R. (2013) Active Natural Foci of Tick-Borne Neuroinfection in the North-West Region of Ukraine. In: Tkachev S. eds. „*Encephalitis*“, 145–160.
- Lutsuk, S. N., Dyachenko, Y., Kazarina, E. V. (2002) Piroplasmoses dogs in Stavropol. *Journal of Veterinary Medicine*, (3), 34–37 [In Russian].
- Lutsuk, S. N., Dyachenko, Y., Zakharova, N. N. (2007) *Piroplasmoses dogs*. Stavropol, „Agrus“ 1–144 [In Russian].
- Lutsuk, S. N., Zolotukhin, L. Z., Dyachenko, Y., Kazarina, E. V. (1999) Diagnosis of babesiosis in dogs. In: *Diagnosis, treatment, prevention of diseases in farm animals*. Collection of scientific works of the Stavropol GSA. Stavropol, 43–46 [In Russian].
- Lviv, D. K., Pisarev, V. B., Petrov, V. A., Grigoriev, N. V. (2003) West Nile Fever (According to the outbreaks in the Volgograd region in 1999–2002). In: *Appendix N 1 to the Bulletin Volgogradskoro meditsinskoro University*, **59** (9), Volgograd, 1–104 [In Russian].
- Lyapunov, A. V., Hasnatinov, M. A., Danchinova, G. A., Chaporgina, E. A., Arbat, E. V., Shulunov, S. S., Tunik, T. V., Kaverzina, A. S., Petrov, I. V. (2011) Epidemiological role of ticks genera *Dermacentor* and *Haemaphysalis* in Cis-Baikal. *News of Irkutsk State University. Series Biology, Ecology*, **4** (4), 63–69 [In Russian].
- Lykov, V. A., Khabibullina, L. I., Serebrova, G. M. (1971) The incidence of tick-borne encephalitis and the urban centers of the city of Perm. *Studies of the Perm State University them Gorky*, (249), 39–48 [In Russian].
- Lyamina, V. (2012) Ticks and epidemiological importance in the Ivanovo region. *The success of modern science*, (4), 14 [In Russian].
- Lyubeznova, O. N., Bondarenko, A., Oparin, L. V., Lambrinaki, E. V. (2012) Features of the epidemiology of Lyme borreliosis in the Kirov region. *Far Eastern Journal infectious disease*, (20), 34–37 [In Russian].
- Maeoka, Y., Baba, S., Suzuki, H. (1990) Laboratory observations of *Haemaphysalis longicornis* Neumann after a human bite. *Journal of Dermatology*, **17** (10), 630–632.
- Maetzel, D., Maier, W. A., Kampen, K. (2005) *Borrelia burgdorferi* infection prevalences in questing *Ixodes ricinus* ticks (Acari: Ixodidae) in urban and suburban Bonn, western Germany. *Parasitology Research*, **95**, 5–12.
- Magnarelli, L. A., Denicola, A., Stafford III, K. C., Anderson, J. F. (1995) *Borrelia burgdorferi* in an Urban Environment: White-Tailed Deer with Infected Ticks and Antibodies. *Journal of clinical microbiology*, **33** (3), 541–544.
- Magnarelli, L. A., Anderson, J. F., Burgdorfer, W., Chappell, W. A. (1984) Parasitism by *I. scapularis* (dammini) (Acari: Ixodidae) and antibodies to spirochetes in mammals at Lyme disease foci in Connecticut, USA. *Journal of Medical Entomology*, **21**, 52–57.
- Magnarelli, L. A., Anderson, J. F. (1988) Ticks and biting insects infected with the etiologic agent of Lyme disease, *Borrelia burgdorferi*. *Journal of Clinical Microbiology*, **26**, 1482–1486.
- Magnarelli, L. A., Anderson, J. F., Apperson, C. S., Fish, D., Johnson, R. C., Chappel, I. W. A. (1986) Spirochetes in ticks and antibodies to *Borrelia burgdorferi* in white-tailed deer from Connecticut, New York State, and North Carolina. *Wildlife Diseases*, **22**, 178–188.
- Magnarelli, L. A., Anderson, J. F., Cartter, M. L. (1993) Geographic distribution of white-tailed deer with ticks and antibodies to *Borrelia burgdorferi* in Connecticut. *Yale Journal of Biology and Medicine*, **66** (1), 19–26.
- Magnarelli, L. A., Anderson, J. F., Fish, D. (1987) Transovarial transmission of *Borrelia burgdorferi* in *Ixodes dammini* (Acari: Ixodidae). *Journal of Infectious Diseases*, **156**, 234–236.
- Magnarelli, L. A., Anderson, J. F., Hyland, K. E., Fish, D., Mcaninch, J. B. (1988) Serologic analyses of *Peromyscus leucopus*, a rodent reservoir for *Borrelia burgdorferi* in Northeastern United States“. *Journal of clinical microbiology*, **26** (6), 1138–1141.
- Magnarelli, L. A., Stafford, K. C 3rd., Mather, T. N., Yeh, M. T., Horn, K. D., Dumler, J. S. (1995) Hemocytic rickettsia-like organisms in ticks: serologic reactivity with antisera to Ehrlichiae and detection of DNA of agent of human granulocytic ehrlichiosis by PCR. *Journal of Clinical Microbiology*, **33** (10), 2710–2714.
- Magnarelli, L. A., Swihart, R. K. (1991) Spotted fever group rickettsiae or *Borrelia burgdorferi* in *Ixodes cookei* (Ixodidae) in Connecticut. *Journal of Clinical Microbiology*, **29** (7), 1520–1522.
- Maia, C., Ramos, C., Coimbra, M., Bastos, F., Martins, A., Pinto, P., Nunes, M., Vieira, M. L., Cardoso, L., Campino, L. (2014) Bacterial and protozoal agents of feline vector-borne diseases in domestic and stray cats from southern Portugal. *Parasites & Vectors*, **7**, 115. <http://www.parasitesandvectors.com/content/7/1/115>
- Main, A. J., Carey, A. B., Carey, M. G., Goodwin, R. H. (1982) Immature *I. scapularis* (dammini) (Acari: Ixodidae) on small animals in Connecticut, USA. *Journal of Medical Entomology*, **19**, 655–664.
- Mäkinen, J., Vuorinen, I., Oksi, J., Peltomaa, M., He, Q., Marjamäki, M., Viljanen, M.–K. (2003) Prevalence of granulocytic *Ehrlichia* and *Borrelia burgdorferi* sensu lato in *Ixodes ricinus* ticks collected from southwestern Finland and from Vormsi Island in Estonia. *Acta Pathologica, Microbiologica et Immunologica Scandinavica*, **111**, 355–362.
- Maliy, V. P., Shepeleva, N. V., Kostenko, I. S., Makml, T. E., Tkachenko, L. V. (2011) Epidemiological aspects of tick-borne infections in the Kharkiv region. In: *Problems and evolution of the epidemic process of leading and parasitic infections present*. Abstracts, Kharkiv, 39–40 [In Russian].
- Maliy, V. P., Shepileva, N. V., Tkachenko, L. V. 2012 Tick-borne infections in the Kharkiv region. *Journal of Internal Medicine*, (3), 99–102 [in Russian].
- Mälvková, D., Danielová, V., Dusbá-Bek, F., Holubová, J., Honzáková, E. (1981) Tick-borne encephalitis in recreation areas of Prague. In: Kunz Ch. eds. *Tick-Borne Encephalitis*. Internat. Symposium Baden/Vienna 19th-20th October 1979, Facultas-Verlag, Wien, 251–256.
- Mälvková, D., Danielová, V., Holubová, J., Marhoul, Z., Bouchalová, J. (1983) Isolation of tick-borne encephalitis viruses and uukuniemi viruses from ticks in Prague park. *Ceskoslovenska epidemiologie mikrobiologie immunologie*, **32** (3), 138–142.
- Mälvková, D., Holubova, J., Marhoul, Z., Gerny, V., Hajkova, Z., Rodl, P. (1984) Investigations on arboviruses in the Most area during the years 1981–1982. Isolation of Tahyna virus. *Cs. Epidemic*, **33**, 88–96.
- Malkova, I. L., Rubtsova, I. Yu. (2007) Analysis of the incidence of tick-borne encephalitis and public activity of ticks in the suburban areas of Udmurtia. *Bulletin of Udmurt University*, (11), 3–16 [In Russian].
- Malkova I. L., Rubtsova I. Yu. (2010) On the comparability of the methods used in studying the territorial activity of ticks (Ixodidae) (by the example of Zavyalovsky district of the Udmurt Republic). *Bulletin of Udmurt University*, (6–4), 19–25 [In Russian].
- Malkova, I. L., Rubtsova, I. Yu. (2013) Analysis of the causes of the transformation of a natural focus of tick-borne encephalitis in the territory of Udmurtia. *Bulletin of Udmurt University*, (3), 138–143 [In Russian].
- Mancini, F., Di Luca, M., Toma, L., Vescio, F., Bianchi, R., Khoury, C., Marini, L., Rezza, G., Ciervo, A. (2014) Prevalence of tick-borne

- pathogens in an urban park in Rome, Italy. *Annals of Agricultural and Environmental Medicine*, **21** (4), 723–727.
- Marié, J. L., Davoust, B., Socolovschi, C., Raoult, D., Parola, P. (2012) Molecular detection of rickettsial agents in ticks and fleas collected from a European hedgehog (*Erinaceus europaeus*) in Marseilles, France. *Comp Immunol Microbiol Infect Disease*, **5** (1), 77–79.
- Marquez, F. J. (2008) Spotted fever group *Rickettsia* in ticks from southeastern Spain natural parks. *Experimental and Applied Acarology*, **45**, 185–194.
- Marquez, F. J., (2009) Rickettsiae in ticks from wild ungulates of Sierra Nevada and Doñana National Parks (Spain). *Clinical Microbiology and Infection*, **15**, 227–229.
- Márquez, F. J., Rodríguez-Liébana, J. J., Soriguer, R. C., Muniáin, M. A., Bernabeu-Wittel, M., Caruz, A., Contreras-Chova, F. (2008) Spotted fever group *Rickettsia* in brown dog ticks *Rh. sanguineus* in southwestern Spain. *Parasitology Research*, **103** (1), 119–122.
- Martinod, S., Brossard, M., Moreau, Y. (1985) Immunity of dogs against *Babesia canis*, its vector tick *Dermacentor reticulatus*, and *Ixodes ricinus* in endemic area. *Journal of Parasitology*, **71**, 269–273.
- Martins, C. M., Barros, Cda. C., Bier, D., Marinho, A. P., Figueiredo, J. M., Hoffmann, J. L., Molento, M. B., Biondo, A. W. (2012) Dog parasite incidence and risk factors, from sampling after one-year interval, in Pinhais, Brazil. *Brazilian Journal of Veterinary Parasitology*, **21** (2), 101–106.
- Martins, T. F., Spolidorio, M. G., Batista, T. C., Oliveira, I. A., Yoshinari, N. H., Labruna, M. B. (2009) Occurrence of ticks (Acari: Ixodidae) in the municipality of Goiatins, Tocantins. *Brazilian Journal of Veterinary Parasitology*, **18** (2), 50–52.
- Masuzawa, T., Kharitonov, I. G., Kadosaka, T., Hashimoto, N., Kudeken, M., Takada, N., Kaneda, K., Imai, Y. (2005) Characterization of *Borrelia burgdorferi* sensu lato isolated in Moscow province — a sympatric region for *I. ricinus* and *Ixodes persulcatus*. *Journal of Medical Microbiology*, **294** (7), 455–464.
- Masuzawa, T., Kharitonov, I. G., Okamoto, Y., Fukui, T., Ohashi, N. (2008) Prevalence of *Anaplasma phagocytophilum* and its coinfection with *Borrelia afzelii* in *I. ricinus* and *Ixodes persulcatus* ticks inhabiting Tver Province (Russia) — a sympatric region for both tick species. *Journal of Medical Microbiology*, **57** (8), 986–991.
- Matias, J., Garcia, M. V., Cunha, R. C., Aguirre, Ade. A., Barros, J. C., Csordas, B. G., Andreotti, R. (2015) Spotted fever group *Rickettsia* in *Amblyomma dubitatum* tick from the urban area of Campo Grande, Mato Grosso do Sul, Brazil. *Ticks Tick Borne Disease*, **6**(2), 107–110.
- Matijala, T. P., Taouk, A., Houwers, D., Teske, E., Penzhorn, B. L., de Lange, T. & Jongejan, F. (2005) Autochthonous canine babesiosis in the Netherlands. *Veterinary Parasitology*, **131**, 23–29.
- Matthea, S., Lovelyb, C., Gauglerc, A., Beekerd, R., Ventereand, H. R., Horak, I. G. (2010) Ixodid ticks on domestic dogs in the Northern Cape Province of South Africa and in Namibia. *South African Veterinary Association-Tydskrif*, **81** (2), 126–128.
- Matuschka, F. R., Endepols, S., Richter, D., Ohlenbusch, A., Eiffert, H., Spielman, A. (1996) Risk of Urban Lyme Disease Enhanced by the Presence of Rats. *The Journal of Infectious Diseases*, **174**, 1108–1111.
- Matuschka, F. R., Endepols, S., Richter, D., Spielman, A. (1997) Competence of urban rats as reservoir hosts for Lyme disease spirochetes. *Journal of Medical Entomology*, **34** (4), 489–493.
- Matuschka, F. R., Lange, R., Spielman, A., Richter, D., Fischer, P. (1990) Subadult *I. ricinus* (Acari: Ixodidae) on rodents in Berlin, West Germany. *Journal of Medical Entomology*, **27** (3), 385–390.
- Matuschka, F. R., Spielman, A. (1992) Loss of Lyme disease spirochetes from *I. ricinus* ticks feeding on European blackbirds. *Experimental Parasitology*, **74**, 151–158.
- Maupin, G. O., Fish, D., Zultowsky, J., Campos, E. G., Piesman, J. (1991) Landscape ecology of Lyme disease in a residential area of Westchester County, New York. *American Journal of Epidemiology*, **133** (11), 1105–1113.
- Mavin, S., Hopkins, P. C., MacLennan, A., Joss, A. W., Ho-Yen, D. O. (2009) Urban and rural risks of Lyme disease in the Scottish Highlands. *Scottish Medical Journal*, **54** (2), 24–26.
- May, K., Jordan, D., Fingerle, V., Strube, C. (2015) *Borrelia burgdorferi* sensu lato and co-infections with *Anaplasma phagocytophilum* and *Rickettsia* spp. in *Ixodes ricinus* in Hamburg, Germany. *Medical and Veterinary Entomology*, **29** (4), 425–429.
- May, K., Strube, C. (2014) Prevalence of Rickettsiales (*Anaplasma phagocytophilum* and *Rickettsia* spp.) in hard ticks (*Ixodes ricinus*) in the city of Hamburg, Germany. *Parasitology Research*, **113** (6), 2169–2175.
- McCown, M., Monterroso, V. H., Grzeszak, B. (2011) Surveillance of zoonotic and infectious diseases in Ecuador: implications for special operations forces medical operations, personnel, and canines. *Special Operations Medical Journal*, **11** (3), 61–65.
- McCown, M. E., Monterroso, V. H., Cardona, W. (2014) Surveillance for *Ehrlichia canis*, *Anaplasma phagocytophilum*, *Borrelia burgdorferi*, and *Dirofilaria immitis* in Dogs From Three Cities in Colombia. *Special Operations Medical*, **14** (1), 86–90.
- McCown, M. E., Opel, T., Grzeszak, B. (2013) Vector-borne disease surveillance in Puerto Rico: pathogen prevalence rates in canines. Implications for public health and the U.S. Military. Applying the one health concept. *Special Operations Medical*, **13** (2), 59–63.
- McLaughlin, J. (2002) *Gardens as a source of infectious disease: reducing the risk*. Miami Dade County Extension Service, 25. (Available online: http://miami-dade.ifas.ufl.edu/pdfs/urban_hort/Gardening-Infectious-Disease.PDF)
- McQuiston, J. H., Nicholson, W. L. (2010) Emerging tick-borne rickettsial diseases affecting dogs and humans in the United States. In: *Proceedings of the 5th Symposium of the CVBD World Forum*. Bayer HealthCare, Animal Health Publ, 6–14.
- Means, R. G., White, D. J. (1997) New distribution records of *Amblyomma americanum* (L.) (Acari: Ixodidae) in New York State. *Journal of Vector Ecology*, **22** (2), 133–145.
- Melo, A. L., Martins, T. F., Horta, M. C., Moraes-Filho, J., Pacheco, R. C., Labruna, M. B., Aguiar, D. M. (2011) Seroprevalence and risk factors to *Ehrlichia* spp. and *Rickettsia* spp. in dogs from the Pantanal Region of Mato Grosso State, Brazil. *Ticks Tick Borne Disease*, **2** (4), 213–218.
- Mendes-de-Almeida, F., Crissiuma, A. L., Gershony, L. C., Willi, L. M., Paiva, J. P., Guerrero, J., Labarthe, N. (2011) Characterization of ectoparasites in an urban cat (*Felis catus* Linnaeus, 1758) population of Rio de Janeiro, Brazil. *Parasitology Research*, **108** (6), 1431–1435.
- Michalik, J., Hofman, T., Buczek, A., Skoracki, M., Sikora, B. (2003) *Borrelia burgdorferi* s. l. in *Ixodes ricinus* (Acari: Ixodidae) ticks collected from vegetation and small rodents in recreational areas of the city of Poznań. *Journal of Medical Entomology*, **40**, 690–697.
- Michalik, J., Rejmenciak, A. (1998) Occurrence of *Ixodes ricinus* in different types of forest habitats of the city of Poznań and their infection rate with *Borrelia burgdorferi* sensu lato. *Wiadomości parazytologiczne*, **44**, 388.
- Mikryukova, T. P., Moskvitina, N. S., Kononova, Y. V., Korobitsyn, I. G., Kartashov, M. Y., Tyuten Kov, O. Y., Protopopova, E. V., Romanenko, V. N., Chaurov, E. V., Gashkov, S. I., Kononova, S. N., Moskvitin, S. S., Tupota, N. L., Sementsova, A. O., Ternovoi, V. A., Loktev, V. B. (2014) Surveillance of tick-borne encephalitis virus in wild birds and ticks in Tomsk city and its suburbs (Western Siberia). *Ticks Tick Borne Disease*, **5** (2), 145–151.
- Milutinović, M. (2000) Diversity and ecology of the Ixodid ticks (Acari: Ixodidae) in central Serbia, Yugoslavia. *Archives of Biological Science Belgrade*, **52**, 39–46.
- Milutinović, M., Aleksić-Bakrač, N., Pavlović, I. (1998) Faunistic and ecological notes on ticks (Acari: Ixodidae, Argasidae) in the extended area of Belgrade. *Magy. Állatorvosok*, **120**, 434–436.

- Milutinović, M., Petrović, Z. (1993) Ticks in the region of Belgrade. *Glas Srp Akad Nauk Medicina*, (43), 93–97.
- Milutinović, M., Radulović, Ž. (2002) Ecological notes on ticks (Acari Ixodidae) in Serbia (central regions). *Acta Veterinaria Belgrade*, **52**, 49–58.
- Milutinović, M., Radulović, Ž., Jovičić, V., Oreščanin, Z. (2004) Population dynamics and *Borrelia burgdorferi* infection rate of *Ixodes ricinus* ticks in the Belgrade area. *Acta Veterinaria*, **54** (2–3), 219–225.
- Milutinović, M., Radulović, Ž., Tomanović, S., Tomanović, Ž. (2006) Seasonal distribution of Borreliae in *Ixodes ricinus* ticks in the Belgrade region. *Archives of Biological Science Belgrade*, **58** (3), 183–186.
- Moiseeva, A. V., Kompantsev, N. F., Litus, Z. V., Tretyakova, L. V., Nebogatkin, I. V., Laugen, E. A. 1991. Epidemic and epizootic situation of tularemia in Ukraine at present and immediate tasks. In: Abstracts of the All-Union Scientific-practical conference „Actual problems of prevention of tularemia, „and a plenum of the problem commission „natural focal infections“, Simferopol, 16–17 [in Russian].
- Moskvitina, N. S., Romanenko, V. N., Ternovoi, V. A., Ivanova, N. V., Protopopova, E. V., Kravchenko, L. B., Kononova, Iu. V., Kuranova, V. N., Chausov, E. V., Moskvitin, S. S., Pershikova, N. L., Gashkov, S. I., Konovalova, S. N., Bol'shakova, N. P., Loktev, V. B. (2008) Detection of the West Nile Virus and its genetic typing in ixodid ticks (Parasitiformes: Ixodidae) in Tomsk City and its suburbs. *Parazitologiya*, **42** (3), 210–25 [In Russian].
- Moskvitina, N. S., Zavjalov, E. L., Ivanova, N. V., Kravchenko, L. B., Suchkova, N. G., Agulova, L. P., Bolshakova, N. P., Guber, J. E., Moshkin, M. P. (2008) Distribution of taiga ticks and tick-borne infections in heterogenous populations of Myodes. In: *11th International conference Rodens et Spatium on Rodents Biology* (24–28 July, 2008). Myshkin, Russia, 11.
- Moskvitina, N. S., Korobitsyn, I. G., Tyutenkov, O. J., Gashkov, S. I., Kononov, Y. V., Moskvitin, S. S., Romanenko, V. N., Mikryukova, T. P., Protopopov, E. V., Kartashov, M. Y., Chausov, E. V., Konovalov, S. N., Tupota, N. L., Sementsova, A. O., Ternovoy, V. A., Loktev, V. B. (2014) Participation of birds in the maintenance of tick-borne infections in the Tomsk anthropurgic hearth. *Proceedings of the Russian Academy of Sciences. Series Biological*, (4), 408–414 [In Russian].
- Moskvitina, N. S., Loktev, V. B., Romanenko, V. N., Agulova, L. P., Andreevskiy, A., Bolshakov, N. P., Gashkov, S. I., Ivanov, N. V., Kononov Y. V., Korobitsyn, I. G., Kravchenko, L. B., Kuranova, V. N., Moskvitin, S. S., Protopopov, E. V., Suchkov, N. G., Ternovoy, V. A., Tyutenkov, O. J., Chausov, E. V. (2009) Zooparazitarnye complexes foci of tick-borne infections in the transformed ecosystems. In: *Biodiversity and role of animals in ecosystems*. Materials of V International Conference. Dnepropetrovsk, Lear, 252–254 [In Russian].
- Moskvitina, N. S., Romanenko, V. N., Ternovoy, V. A., Ivanova, N. V., Protopopov, E. V., Kravchenko, L. B., Kononov, Y. V., Kuranova, V. N., Chausov, E. V., Moskvitin, S. S., Pershikova, N. L., Gashkov, S. I., Konovalov, S. N., Bolshakov, N. P., Loktev, V. B. (2008) Detection of West Nile virus and genotyping in ticks (Parasitiformes: Ixodidae) in Tomsk and its suburbs. *Parasitology*, **42** (3), 210–225 [In Russian].
- Moteiunas, L. I., Shadzhene, A. R., Tumosene, S. V., Kalinin, M. I., Dauetas, S. V., Regalene, G. K. (1990) Lyme borreliosis in Lithuania: its prevalence, clinical picture and treatment efficacy. *Zhurnal mikrobiologii, epidemiologii, i immunobiologii*, **7**, 19–23 [In Russian].
- Mouffok, N., Benabdellah, A., Richet, H., Rolain, J. M., Razik, F., Belamadani, D., Abidi, S., Bellal, R., Gouriet, F., Midoun, N., Brouqui, P., Raoult, D. (2006) Reemergence of rickettsiosis in Oran, Algeria. *Annals of the New York Academy of Sciences*, **1078**, 180–184.
- Movila, A., Rolain, J. M., Podavalenko, A., Toderas, I., Tkachenco, L. (2009) Detection of spotted fever group rickettsiae and family Anaplasmataceae in *Ixodes ricinus* ticks from Republic of Moldova and Eastern Ukraine. *Clinical Microbiology and Infection*, (2), 32–33.
- Mumcuoglu, K. Y., Burgan, I., Ioffe-Uspensky, I., Manor, O. (1993) *Rh. sanguineus*: observations on the parasitic stage on dogs in the Negev Desert of Israel. *Experimental and Applied Acarology*, **17**, 793–798.
- Muñoz, L. E. & M. E. Casanueva. (2001) Ampliación de ámbito de la garrapata *Rh. sanguineus* (Acari: Ixodidae) en Chile. *Revista de biología tropical*, **49**, 1285.
- Nadзамová, D., Petko, B., Stefancíková, A., Cisláková, L., Stěpanová, G., Seba, M. (2000) Potential foci of Lyme borreliosis in towns. *Central European Journal of Public Health*, **8** (3), 176–178.
- Mzhel'skaya, T. V., Kirillova, A. V., Kovalskii, A. G., Visochina, N. P., Trotsenko O. E., Prisyazhnyuk, E. N., Pivovarov, I. G. (2014) Analysis of epizootic situation in hot spot of tick borne encephalitis in the South of Khabarovsk region, based on examination of ticks, removed from citizens of Khabarovsk City. *Far Eastern Journal of Infectious Pathology*, (25), 85–87 [In Russian].
- Nafeev, A. A. (2006) The organization of social and hygienic monitoring of natural focal infections in the city. *Public health and environment*, (11), 18–23 [In Russian].
- Nafeev, A. A. (2007) Ecological and parasitological background spread *Ixodes* tick borreliosis in the centers with different landscape confinement. *Medical Parasitology and parasitic diseases*, (2), 46–49 [In Russian].
- Nafeev, A. A., Fefelova, E. V. (2008) The reasons affecting the incidence of *Ixodes* tick borreliosis. *Disinfection case* (4), 67–69 [In Russian].
- Nafeev, A. A., Shemyatikhina, G. B. (2009) Social significance of tick-borne diseases in urban areas. *Far Eastern Journal Infectious Pathology*, (15), 123–124 [In Russian].
- Naglov, V. A., Tkach, G. E., Simonenko, O. V. 2000. Features of ecology of the tick *Ixodes ricinus* L. (Ixodidae) in a forested area of Kharkiv. *Kharkov Entomological Society gazette*, **8** (1), 127–131 [in Russian].
- Nagorny, S. A., Levchenko, N. V. (2000) Piroplasmosis in Rostov-on-Don. *Trudy the Rostov Research Institute of Microbiology and Parasitology*, Rostov, 1–20 [In Russian].
- Nebogatkin, I. V. (1996) A spontane reproduction focus of the ticks *R. rossicus* (Acari, Ixodidae) in the vicinity of Kyiv. *Vestnik zoologii*, (3), 65–67 [In Russian].
- Nebogatkin, I. V. (1999) The problems spread of ticks and tick-borne borreliosis in Kiev. *The health of your pets*, (5), 53–57 [In Russian].
- Nebogatkin, I. V. (2012) Cats as feeders for ticks (Acari: Ixodida) in Kyiv megalopolis. In: *Arthropods. The medical and economic importance*. Lublin: AKAPIT, 81–85.
- Nebogatkin, I. V. (2012) Intraurban Near-Water Areas and Their Role in Distribution of Ticks (Acari, Ixodidae) in Megalopolis the Example of Kyiv. *Vestnik zoologii*, **46** (2), 29–34.
- Nebogatkin, I. V. (2014) Birds as the feeders of ticks (Acari, Ixodida) in megalopolis of Kyiv. *Vestnik zoologii*, **48** (5), 467–470.
- Nebogatkin, I. V. (2015) Features of parasitism of ticks on dogs in the urban landscape in megalopolis of Kyiv. *Jubilee reading dedicated to the 70th anniversary of the UNDP and the 110th anniversary of academician AP Markiewicz (Kyiv 5th November 2015)*: Abstracts. Kyiv. http://mail.izan.kiev.ua/ussp-jr2015/UNTP-Tezy_2015.pdf, 43.
- Nebogatkin, I. V. (2015) Specifics of seasonal fluctuations of ticks activity in Kyiv in 2013–2014, and some problems of long-term and short-term prognoses. *Jubilee reading dedicated to the 70th anniversary of the UNDP and the 110th anniversary of academician AP Markiewicz (Kyiv 5th November 2015)*: Abstracts. Kyiv. http://mail.izan.kiev.ua/ussp-jr2015/UNTP-Tezy_2015.pdf, 44.
- Nebogatkin, I. V., Tovpinets, N. N. (1997) Outbreak the density *Rh. sanguineus* (Ixodidae) in Crimea (Kertch). *Vestnik zoologii*, (4), 81 [In Russian].

- Neves, L., Afonso, S., Horak, I. G. (2004) Ixodid ticks on dogs in southern Mozambique. *Onderstepoort Journal of Veterinary Research*, **71**, 279–283.
- Nijhof, A. M., Bodaan, C., Postigo, M., Nieuwenhuijs, H., Opsteegh, M., Franssen, L., Jebbink, F., Jongejan, F. (2007) Ticks and associated pathogens collected from domestic animals in the Netherlands. *Vector Borne Zoonotic Disease*, **7** (4), 585–595.
- Nikiforova, O. V., Naglov, V. A., Kulshyn, V. E. (2005) New data on Ixodes ticks, carriers of pathogens as some infections in the Kharkiv region. *Veterinary medicine: Interdepartmental thematic scientific collection*, II (85), 833–837 [In Ukrainian].
- Nikiforova, O. V., Naglov, V. A., Ponomarenko, V. (2005) Some features of the dynamics of *I. ricinus* in Kharkiv region. *Bulletin of Sumy State Agrarian University*, (1–2), 68–173. [In Ukrainian].
- Nikitin, A. Y., Antonov A. M. (2005) *Census, forecasting and regulation of the taiga tick population in the recreational area of the city of Irkutsk*. Irkutsk, Irkutsk State University, 1–116 [In Russian].
- Nikitin, A. Y., Zvereva, T. V., Gordeiko, N. S., Borisenko, E. A., Verzhutskaya, Yu. A., Kameneva, T. A. (2012) Structure of ixodes tick communities at the continental part of south primorye territory and Russian island. *Bulletin of the East Siberian Scientific Center of the SB RAMS*, **87** (5–1), 281–283.
- Nosek, J., (1982) Ticks (Ixodida) and their potential hosts in city. *Zivotne prostredie*, **16**, 328–329.
- Novgorodtseva, S. V. (1999) *Epizootology, pathogenesis and therapy dogs babesiosis*. Ivanovo, 1–26 [In Russian].
- Novikova, V. P. (2005) Ticks Cherkessk and the surrounding area. *Medical Parasitology and parasitic diseases*, (2), 13–15 [In Russian].
- Nowosad, A., Jenek, J., Głazaczow, A., Szkaradkiewicz, A. (1999) Occurrence of the spirochetes *Borrelia burgdorferi* Sensulato in ticks *I. ricinus* (L.) from selected municipal woods of the city of Poznań. *Wiadomości parazytologiczne*, **45** (4), 533–534.
- Nowosad, A., Jenek, J., Głazaczow, A., Wal, M. (1999) Ticks *Ixodes ricinus* (Linnaeus, 1758) from selected municipal forests of the city Poznan and their infection with the spirochetes *Borrelia burgdorferi* senso lato. *Przegląd Epidemiologiczny*, **53**, 299–308.
- Obiegala, A., Pfeffer, M., Pfister, K., Karnath, C., Silaghi, C. (2015) Molecular examinations of *Babesia microti* in rodents and rodent-attached ticks from urban and sylvatic habitats in Germany. *Ticks Tick Borne Disease*, **6** (4), 445–449.
- Obsomer, V., Wirtgen, M., Linden, A., Claerebout, E., Heyman, P., Heylen, D., Madder, M., Maris, J., Lebrun, M., Tack, W., Lempereur, L., Hance, T., Van Impe, G. (2013) Spatial disaggregation of tick occurrence and ecology at a local scale as a preliminary step for spatial surveillance of tick-borne diseases general framework and health implications in Belgium. *Parasites & Vectors*, **6**, 190. <http://www.parasitesandvectors.com/content/6/1/190>
- Ogden, N. H., Cripps, P., Davison, C. C., Owen, G., Parry, J. M., Timms, B. J. (2000) The ixodid tick species attaching to domestic dogs and cats in Great Britain and Ireland. *Medical and Veterinary Entomology*, **14**, 332–338.
- Ohanjanyan, A. M. (1948) Biology *Rhipicephalus turanicus* B. Pom. and *Rh. Bursa* Can. et Fanz. in terms of the Armenian SSR. *Proceedings of the Academy of Sciences of the Armenian Soviet biology and agricultural sciences*, (3), 231–244 [In Russian].
- Ohashi, N., Inayoshi, M., Kitamura, K., Kawamori, F., Kawaguchi, D., Nishimura, Y., Naitou, H., Hiroi, M., Masuzawa, T. (2005) *Anaplasma phagocytophilum* — infected ticks, Japan. *Emerging Infectious Diseases*, **11** (11), 1780–1783.
- Okoli, I. C., Okoli, C. G., Opara, M. (2006) Environmental and multi-host infestation of the brown dog tick, *Rh. sanguineus* in Owerri, South-east Nigeria — a case report. *Veterinarski arhiv*, **76** (1), 93–100.
- Olenev, N. O. (1927) Contribution to the Biology of the Cattle Tick, *Ixodes ricinus*, L., in the Novgorod Government. *Defense des Plantes*. Leningrad, **4** (2), 354–368.
- Oliver, J. H Jr., Clark, K. L., Chandler, F. W Jr., Tao, L., James, A. M., Banks, C. W., Huey, L. O., Banks, A. R., Williams, D. C., Durden, L. A. (2000) Isolation, cultivation, and characterization of *Borrelia burgdorferi* from rodents and ticks in the Charleston area of South Carolina. *Journal of Clinical Microbiology*, **38** (1), 120–124.
- Omeragic, J. (2011) Ixodid ticks in Bosnia and Herzegovina. *Experimental and Applied Acarology*, **53** (3), 301–309.
- Omeragić, J., Jažić, A., Zuko, A. (2003) Parasites of dogs and cats in area of Bosnia and Herzegovina founded to 2002. *Veterinaria*, **52** (1–4): 157–164.
- Oren, I., Kraoz, Z., Hadani, Y., Kassis, I., Zaltzman-Bershsky, N., Finkelstein, R. (2005) An outbreak of Q fever in an urban area in Israel. *European Journal of Clinical Microbiology and Infectious Diseases*, **24**, 338–341.
- Orlova, T. N., Vasilenko, N. F., Afanasiev, E. N., Chumakov, I. V., Sannikov, I. V., Kulichenko, A. N. (2008) study of the circulation of the causative agent of Lyme borreliosis in the Stavropol region. *Problems particularly dangerous infections*, **96** (2), 20–22 [In Russian].
- Orr, J. M., Smith, J. D., Zawada, S. G., Arias, J. R. (2013) Diel and seasonal activity and trapping of ticks (Acari: Ixodidae) in Northern Virginia, U. S. A. *Systematic & Applied Acarology*, **18** (2), 105–111.
- Otranto, D., Dantas-Torres, F., Giannelli, A., Latrofa, M., Cascio, A., Cazzin, S., Ravagnan, S., Montarsi, F., Zanzani, S., Manfredi, M., Capelli, G. (2014) Ticks infesting humans in Italy and associated pathogens. *Parasites & Vectors*, **7**, 328. <http://www.parasitesandvectors.com/content/7/1/328>
- Ott, A., Schönberg, A. (1989) *Borrelia burgdorferi*, clinical aspects, cultivation and identification of the pathogen in erythema migrans in Berlin. *Zeitschrift für Hautkrankheiten*, **64** (8), 644–648.
- Overzier, E., Pfister, K., Thiel, C., Herb, I., Mahling, M., Silaghi, C. (2013) *Anaplasma phagocytophilum* in questing *Ixodes ricinus* ticks: comparison of prevalences and partial 16S rRNA gene variants in urban, pasture, and natural habitats. *Applied and Environmental Microbiology*, **79** (5), 1730–1734.
- Overzier, E., Pfister, K., Thiel, C., Herb, I., Mahling, M., Silaghi, C. (2013) Diversity of babesia and rickettsia species in questing *Ixodes ricinus*: a longitudinal study in urban, pasture, and natural habitats. *Vector Borne Zoonotic Disease*, **13** (8), 559–564.
- Øines, Ø., Radzijeuskaja, J., Paulauskas, A., Rosef, O. (2012) Prevalence and diversity of *Babesia* spp. in questing *Ixodes ricinus* ticks from Norway. *Parasites & Vectors*, **5**, 156. <http://www.parasitesandvectors.com/content/5/1/156>
- Panchihina, P. V., Chabrat, M. I. (2011) The organization and carrying out measures against Ixodes ticks in Mariupol. In: *Problems and evolution of the epidemic process of leading and parasitic infections present*. Abstracts Kharkiv, 182 [In Ukrainian].
- Pangrácová, L., Derdákova, M., Pekárik, L., Hviščová, I., Vichová, B., Stanko, M., Hlavatá, H., Peťko, B. (2013) *Ixodes ricinus* abundance and its infection with the tick-borne pathogens in urban and suburban areas of Eastern Slovakia. *Parasites & Vectors*, **6**, 238. <http://www.parasitesandvectors.com/content/6/1/238>
- Pankina, T. M., Istratkina, S. I., Shichin, A. V., Poltorackaj, T. M., Marakulin, V. P., Kondratyev, L. M., Kulikova, L. V., Redkina, N. V. (2009) Acariological situation in the south part of Tomsk region. *Disinfection case*, (4), 33–35 [In Russian].
- Pankina, T. M., Romanenko, V. N., Istratkina, S. I., Shichin, A. V., Poltorackaj, T. M. (2013) Acariological situation in the south part of Tomsk region. *Tomsk State University Journal of Biology*, **24** (4), 67–76 [In Russian].
- Papadopoulos, B., Morel, P. C., Aeschlimann, A. (1996) Ticks of domestic animals in the Macedonia region of Greece. *Veterinary Parasitology*, **63**, 25–40.
- Papazahariadou, M. G., Saridomichelakis, M. N., Koutinas, A. F., Papadopoulos, E. G., Leontides, L. (2003) Tick infestation of dogs in Thessaloniki, northern Greece. *Medical and Veterinary Entomology*, **17**, 110–113.

- Paramasvaran, S., Sani, R. A., Hassan, L., Krishnasamy, M., Jeffery, J., Oothuman, P., Salleh, I., Lim, K. H., Sumarni, M. G., Santhana, R. L. (2009) Ectoparasite fauna of rodents and shrews from four habitats in Kuala Lumpur and the states of Selangor and Negeri Sembilan, Malaysia and its public health significance. *Tropical biomedicine*, **26** (3), 303–311.
- Pascoal, Jde, O., Amorim, Mdo. P., Martins, M. M., Melo, C., Silva Júnior, E. L., Ogrzewalska, M., Labruna, M. B., Szabó, M. P. (2013) Ticks on birds in a savanna (Cerrado) reserve on the outskirts of Uberlândia, Minas Gerais, Brazil. *Brazilian Journal of Veterinary Parasitology*, **22** (1), 46–52.
- Pavlovsky, E. N. (1966) *Natural nidity of transmissible diseases with special reference to the landscape epidemiology of zoonanthroposis*. (Norman D. Levine edited). Urbana, University of Illinois Press, 261.
- Paz, G. F., Ribeiro, M. F., de Magalhães, D. F., Sathler, K. P., Morais, M. H., Fiúza, V. O., Brandão, S. T., Werneck, G. L., Fortes-Dias, C. L., Dias, E. S. (2010) Association between the prevalence of infestation by *Rhipicephalus sanguineus* and *Ctenocephalides felis felis* and the presence of anti-Leishmania antibodies: A case-control study in dogs from a Brazilian endemic area. *Preventive Veterinary Medicine*, **97** (2), 131–133.
- Pejchalová, K., Zákorská, A., Mejzlíková, M., Halouzka, J., Dendis, M. (2007) Isolation, cultivation and identification of *Borrelia burgdorferi* genospecies from *Ixodes ricinus* ticks from the city of Brno, Czech Republic. *Annals of Agricultural and Environmental Medicine*, (1), 75–79.
- Pérez Vera, C., Kapiainen, S., Junnikkala, S., Aaltonen, K., Spillmann, T., Vapalahti, O. (2014) Survey of selected tick-borne diseases in dogs in Finland. *Parasites & Vectors*, **7** (1), 285. <http://www.parasitesandvectors.com/content/7/1/285>
- Pet'ko, B., Siuda, K., Stanko, M., Tresova, G., Karbowiak, G., Fricova, J. (1997) *Borrelia burgdorferi* sensu lato in the *I. ricinus* ticks in southern Poland. *Annals of Agricultural and Environmental Medicine*, **4**, 263–269.
- Pet'ko, B., Štefančíková, A., Nadzamová, D., Stanko, M., Karbowiak, K., Winiarczyk, S. (2001) Epizootiological aspects of Lyme Borreliosis in the city agglomerations of the carpathian regions of Slovakia and Poland and their peripheral part. In: Buczek A, Błaszak Cz. eds. *Stawonogi pasożyty i nosiciele*. Lublin: KGM, 157–164.
- Pettersson, J. H., Golovljova, I., Vene, S., Jaenson, T. G. (2014) Prevalence of tick-borne encephalitis virus in *Ixodes ricinus* ticks in northern Europe with particular reference to Southern Sweden. *Parasit & Vectors*, **7**, 102. <http://www.parasitesandvectors.com/content/7/1/102>
- Pichot, J., Gilot, B., Almire, N., Polette, K., Degelegh, B. (1997) *Ixodes* populations (*I. ricinus* Linné, 1758; *Ixodes hexagonus* Leach, 1815) in the city of Lyon (France) and its outskirts: preliminary results. *Parasite*, (2), 167–171.
- Pinheiro, Mda. C., Lourenço, E. C., Patrício, P. M., Sá-Hungaro, I. J., Farnadas, K. M. (2014) Free-living ixodid ticks in an urban Atlantic Forest fragment, state of Rio de Janeiro, Brazil. *Brazilian Journal of Veterinary Parasitology*, **23** (2), 264–268.
- Plate, P. (1993) Vorkommen von *Ixodes ricinus* in urbanen Lebensräumen am Beispiel des Stadtgebietes von Hannover im Hinblick auf die Lyme-Borreliose. PhD-dissertation, Tierärztliche Hochschule Hannover, Hannover (Germany), 119.
- Plch, J., Basta, J. (1999) Incidence of spirochetes (*Borrelia* sp.) in the tick *Ixodes ricinus* in the urban environment (capital of Prague) between 1994–1997. *Zentralbl Bakteriell*, **289** (1), 79–88.
- Podsiadly, E., Chmielewski, T., Marczak, R., Sochon, E., Tylewska-Wierzbowska, S. (2007) *Bartonella henselae* in the human environment in Poland. *Scand J Infect Disease*, **39** (11–12), 956–962.
- Podsiadly, E., Karbowiak, G., Tylewska-Wierzbowska, S. (2009) Presence of *Bartonella* spp. in Ixodidae ticks. *Clinical Microbiology and Infection*, **2**, 120–121.
- Pohil, S. I., Timchenko, O. M., Chygyrns'ka, N. A., Kostyrya, I. A., Kruglov, T. A. (2011) Ixodid ticks — the likely vector of transmission bartonellozu. In: *Problems and evolution of the epidemic process of leading and parasitic infections present*. Abstracts Kharkiv, 183 [In Ukrainian].
- Pokorný, P. 1990. *Borrelia* sp. in ticks (*Ixodes ricinus*) on the territory of the capital of Prague. *Cesk Epidemiol Mikrobiol Imunol*, **39**, 32–38.
- Pokorný, P., Zahradková, S. 1990. Incidence of *Borrelia* in the common tick (*Ixodes ricinus*) in the area of the city of Brno. *Cesk Epidemiol Mikrobiol Imunol*, **39** (3), 166–170.
- Porta, F. S., Nieto, E. A., Creus, B. F., Espín, T. M., Casanova, F. J., Sala, I. S., García, S. L., Aguilar, J. L., Vilaseca, M. Q. (2008) Tick-borne lymphadenopathy: a new infectious disease in children. *Pediatric Infectious Disease Journal*, **27** (7), 618–622.
- Postic, D., Korenberg, E., Gorelova, N., Kovalevski, Y. V., Bellenger, E., Baranton, G. (1997) *Borrelia burgdorferi* sensu lato in Russia and neighbouring countries: high incidence of mixed isolates. *Research in Microbiology*, **148**, 691–702.
- Prosl, H., Kutzer, E. (1986) Zur Verbreitung der Braunen Hundezecke *Rhipicephalus sanguineus* (Latreille 1806) in Österreich und deren Bekämpfungsmöglichkeiten. *Mitt Osterr Ges Tropenmed Parasitol*, (8), 173–179.
- Queirogas, V. L., Del Claro, K., Nascimento, A. R., Szabó, M. P. (2012) *Capybaras* and ticks in the urban areas of Uberlândia, Minas Gerais, Brazil: ecological aspects for the epidemiology of tick-borne diseases. *Experimental and Applied Acarology*, **57** (1), 75–82.
- Quessada, T., Arnaud, S., Martial-Convert, F., Leudet De La Vallée, H., Pichot, J., Gilot, B. (2003) Prevalence of *Borrelia burgdorferi* species and identification of *Borrelia valaisiana* in questing *I. ricinus* in the Lyon region of France as determined by polymerase chain reaction-restriction fragment length polymorphism. *European Journal of Clinical Microbiology Infectious Diseases*, **22** (3), 165–173.
- Radzijeuskaja, J., Paulauskas, A., Rosef, O. (2008) Prevalence of *Anaplasma phagocytophilum* and *Babesia divergens* in *I. ricinus* ticks from Lithuania and Norway. *International Journal of Medical Microbiology*, **298**, 218–221.
- Ramos, R. A., Galindo, M. K., Santana, Mde. A., Faustino, M. A., Alves, L. C. (2010) Parasitism by *Amblyomma* sp. (Acari: Ixodidae) in humans in the City of Recife, State of Pernambuco, Brazil. *Sociedade Brasileira de Medicina Tropical*, **43** (5), 594–595.
- Raoult, D., Dupont, H. T., Chicheportiche, C., Peter, O., Gilot, B., Drancourt, M. (1993) Mediterranean spotted fever in Marseille, France: correlation between prevalence of hospitalized patients, seroepidemiology, and prevalence of infected ticks in three different areas. *American Journal of Tropical Medicine and Hygiene*, **48** (2), 249–256.
- Rar, V. A., Livanova, N. N., Panov, V. V., Doroschenko, E. K., Pukhovskaya, N. M., Vysochina, N. P., Ivanov, L. I. (2010) Genetic diversity of *Anaplasma* and *Ehrlichia* in the Asian part of Russia. *Ticks Tick Borne Disease*, **1** (1), 57–65.
- Rees, D. H., Axford, J. S. (1994) Evidence for Lyme disease in urban park workers: a potential new health hazard for city inhabitants. *British journal of rheumatology*, **33** (2), 123–128.
- Rehse-Kupper, B., Danielova, V., Klikk, W., Abar, B., Ackermann, R. (1981) The isolation of Central European encephalitis (tick-borne encephalitis) virus from *I. ricinus* (L.) ticks in southern German. In: Kunz Ch. eds. *Tick-Borne Encephalitis. Intemat. Symposium Baden/Vienna 19th–20th October 1979*, Facultas-Verlag, Wien, 257–261.
- Reis, F. S., Barros, M. C., Fraga, E. da C., Santos, A. C. G., Seabra, R. de M., Guerra, N. de C. (2013) Ixodidae tick infestation in humans in Maranhão state, Brazil. *Enciclopédia biosfera, Centro Científico Conhecer — Goiânia*, **9** (17), 3577–3583.
- Renvoisé, A., Delaunay, P., Blanchouin, E., Cannavo, I., Cua, E., Socolovschi, C., Parola, P., Raoult, D. (2012) Urban family cluster of spotted fever rickettsiosis linked to *Rh. sanguineus* infected with

- Rickettsia conorii* subsp. *caspia* and *Rickettsia massiliae*. *Ticks Tick Borne Disease*, **3** (5–6), 389–392.
- Reye, A. L., Hübschen, J. M., Sausy, A., Muller, C. P. (2010) Prevalence and seasonality of tick-borne pathogens in questing *I. ricinus* ticks from Luxembourg. *Applied and Environmental Microbiology*, **76** (9), 2923–2931.
- Rich, G. B. (1971) Disease transmission by the Rocky Mountain wood tick, *Dermacentor andersoni* Stiles, with particular reference to tick paralysis in Canada. *Revue de Medecine Veterinaire*, 1–27.
- Richter, D., Kohn, C., Matuschka, F. R. (2013) Absence of *Borrelia* spp., *Candidatus Neoehrlichia mikurensis*, and *Anaplasma phagocytophilum* in questing adult *Dermacentor reticulatus* ticks. *Parasitology Research*, **112** (1), 107–111.
- Richter, D., Schlee, D. B., Matuschka, F. R. (2011) Reservoir competence of various rodents for the Lyme disease Spirochete *Borrelia spielmanii*. *Applied and Environmental Microbiology*, **77** (11), 3565–3570.
- Rizzoli, A., Silaghi, C., Obiegala, A., Rudolf, I., Hubálek, Z., Földvári, G., Plantard, O., Vayssier-Taussat, M., Bonnet, S., Spitalská, E., Kazimírová, M. (2014) *Ixodes ricinus* and Its Transmitted Pathogens in Urban and Peri-Urban Areas in Europe: New Hazards and Relevance for Public Health. *Frontiers in Public Health*, **2**, 251. doi: 10.3389/fpubh.2014.00251. eCollection 2014.
- Robinson, W. H. (2005) *Handbook of Urban Insects and Arachnids*. Cambridge University Press, Cambridge. 1–481.
- Rodriguez-Vivas, R. I., Albornoz, R. E., Bolio, G. M. (2005) *Ehrlichia canis* in dogs in Yucatan, Mexico: seroprevalence, prevalence of infection and associated factors. *Veterinary Parasitology*, **127** (1), 75–79.
- Romanenko, V. N. (1999) Propagation of the taiga tick (Ixodidae) in Tomsk. *Parasitology*, **33** (1), 61–65 [In Russian].
- Romanenko, V. N. (2002) Ecological habitat taiga tick in the territory of a major city. In: *Environment, biodiversity and the importance of blood-sucking insects and mites Russia*. Veliky Novgorod, 108–110 [In Russian].
- Romanenko, V. N. (2004) Ticks occurring in the territory of Tomsk and the surrounding forests. In: *Siberian zoological conference*. Novosibirsk, 398–399 [In Russian].
- Romanenko, V. N. (2005) The species composition of *Ixodes* ticks in anthropogenically disturbed habitats. In: *Altai: ecology and nature*. Biisk, RIO BPGU, 129–134 [In Russian].
- Romanenko, V. N. (2005) The incidence of tick *Ixodes persulcatus* and *I. pavlovsky* in the forest parks surrounding the city of Tomsk. *Trudy the Kemerovo branch of the Russian Entomological Society*, (3), 53–59 [In Russian].
- Romanenko, V. N. (2005) The peculiarities of the biology of ticks inhabiting the environs of Tomsk City. *Parazitologiya*, **39** (5), 365–370 [In Russian].
- Romanenko, V. N. (2006) The species composition of ticks, attacking a man on the outskirts of Tomsk and its surroundings. *Entomological studies in North Asia*, 429–430 [In Russian].
- Romanenko, V. N. (2007) Changes in the number of ticks (Parasitiformes, Ixodidae) in the recreational load. *Trudy the Kemerovo branch of the Russian Entomological Society. Kemerovo*, (5), 43–49 [In Russian].
- Romanenko, V. N. (2007) Ecological bases ethology of pasture ticks (Parasitiformes, Ixodidae) to search for and attack on the hosts. *Bulletin of Tomsk State University*, (298), 224–228 [In Russian].
- Romanenko, V. N. (2009) Monitoring of species composition and abundance of ticks (Parasitiformes, Ixodidae) in anthropogenic habitats. *Bulletin of Tomsk State University*, (324) 376–379 [In Russian].
- Romanenko, V. N. (2011) Long-term dynamics of species composition and abundance of ticks (Ixodidae) in anthropogenically disturbed and natural areas. *Parasitology*, **45** (5), 384–391 [In Russian].
- Romanenko, V. N. (2011) Factors affecting the duration of the grazing season activity *Ixodes* ticks in anthropogenic landscapes of Western Siberia. In: *Conceptual and applied aspects of research in the field of invertebrate zoology*. Tomsk, 110–115 [In Russian].
- Romanenko, V. N. (2012) Ticks (Parasitiformes: Ixodidae) in the park and the surrounding area of Tomsk. In: *Actual problems of science and education in the natural and agricultural sciences*. (27–28 April). International scientific-practical conference. Petropavlovsk, Part III, 257–263 [In Russian].
- Romanenko, V. N., Chekalkina, N. B. (2004) The species composition of ticks in the city of Tomsk. *Bulletin of the Tomsk State University*, (11) 132–1342 [In Russian].
- Romanenko, V. N., Chekalkina, N. B. (2004) The species composition of ticks in the city of Tomsk. *Bulletin of Tomsk State University. Ser. Natural sciences*, (11), Annex, 680–683 [In Russian].
- Romanenko, V. N., Kondrat'eva, L. M. (2011) The infection of ixodid ticks collected from humans with the tick-borne encephalitis virus in Tomsk city and its suburbs. *Parazitologiya*, **45** (1), 3–10 [In Russian].
- Romanenko, V., Leonovich, S. (2015) Long-term monitoring and population dynamics of ixodid ticks in Tomsk city (Western Siberia). *Experimental and Applied Acarology*, **66** (1), 103–118.
- Romanenko, V. N., Pankov, T. F. (2001) Infection of the taiga tick *Borrelia* in Tomsk. In: *Actual problems of infectious pathology and parasitology*. Tomsk, 111–112 [In Russian].
- Rosicky, B. (1978) Animals, parasites and zoonoses in different types of urban areas. *Folia parasitologica*, **25**, 193–200.
- Rosicky, B. (1977) Arthropods in environment at various stages of anthropogenization. General considerations. *Wiadomosci parazytologiczne*, **23**, 79–85.
- Rosicky, B., Daniel, M. (1978) Natural foci of diseases in the landscape artificially formed by man. *VIII. Internat. Congr. Infect. Parasit. Dis.*, Varna, Bulgaria, 2–6. October 1978, **3**, 477–481.
- Rosicky, B. (1978) Health risks associated with animals in different type of urban area: Present status and new ecological conditions due to urbanization. *Ann Ist Super Sanita*, **14**, 273–286.
- Rubtsova, I. Y. (2013) Landscape and human conditions of the territorial distribution of ticks on the basis of route of observations on the territory of Udmurtia. *Bulletin of the University of Tambov*, **18** (3), 899–902 [In Russian].
- Ruzhnikov, G. M., Danchinova, G. A., Fedorov, R. K., Khasnatinov, M. A., Paramonov, V. V., Lyapunov, A. V. (2012) Modern technologies for informational and analytical evaluation of activity and forecast of spatial distribution of ixodid ticks by the example of Irkutsk city. *Bulletin of SB RAMS*, **32**, (6), 55–59 [In Russian].
- Ryabchenko, A. V., Beklemishev, A. B. (2005) Evaluation of the infestation of ticks *Ixodes persulcatus*, captured in spring 2005 in the recreational area of the Novosibirsk Scientific Center of the spirochete *Borrelia burgdorferi* sl. *Journal of Infectious Pathology*, **12** (3–4), 109–110 [In Russian].
- Ryabchenko, A. V., Beklemishev, A. B. (2007) Monitoring of tick infestation recreational zone of Novosibirsk pathogens Lyme borreliosis. *Vestnik NSU*, **5**, 106–110 [In Russian].
- Ryabchenko, A. V., Ivlev, I. N., Beklemishev, A. B. (2004) A comprehensive assessment of the infestation of ticks *Ixodes persulcatus*, rasprostranennyh in the recreational area of the Novosibirsk Scientific Center of the spirochete *Borrelia burgdorferi* sl. *Journal of Infectious Pathology*, **11** (3–4), 107–110 [In Russian].
- Ryabchenko, A. V., Mamaev, A. L. (2007) Infection ticks *Ixodes persulcatus*, captured in spring 2006. in a forested area of Akademgorodok. *Bulletin SB RAMS*, (5), 58–61 [In Russian].
- Rydzewski, J., Mateus-Pinilla, N., Warner, R. E., Nelson, J. A., Velat, T. C. (2012) *I. scapularis (dammini)* (Acari: Ixodidae) distribution surveys in the Chicago metropolitan region. *Journal of Medical Entomology*, **49** (4), 955–959.
- Ryltseva, E. V. (1970) Ticks fauna of Ufa and its surroundings. In: *Acarological second meeting*. Proc. rep. Kyiv, **2**, 114–115 [In Russian].

- Rytikov, I. A. (2010) Effect of the degree of recreational load on the number of ticks in the city of Minsk. *News BDPU*, **65** (3), 8–12 [In Russian].
- Sá, A. G., Cerqueira, A., O'Dwyer, L. H., Abreu, F. S., Ferreira, R. F., Pereira, A. M., Velho, P. B., Rubini, A. S., Almosny, N. R. (2007) Detection of *Hepatozoon* spp. in Naturally Infected Brazilian Dogs by Polymerase Chain Reaction. *International Journal of Applied Research in Veterinary Medicine*, **5** (2), 49–51.
- Saifullin, M. A., Karetkina, G. N., Safonova, O. A., Popova, S. P., Bazarova, M. V., Malyshev, N. A., Komarova, A. I., Makarova, V. A., Pantiukhina, A. N., Tarasevich, I. V. (2011) Emergence of tick-borne spotted fever group rickettsiosis in Moscow. *Zhurnal mikrobiologii, epidemiologii, i immunobiologii*, (3), 81–86 [In Russian].
- Sakai, S., Noguchi, M., Sofuni, S., Fukushi, G., Yamaguchi, T., Takada, N. (1976) Five cases of tick bite. *Dermatology Journals*, **3** (4), 121–125.
- Salant, H., Mumcuoglu, K. Y., Baneth, G. (2014) Ectoparasites in urban stray cats in Jerusalem, Israel: differences in infestation patterns of fleas, ticks and permanent ectoparasites. *Medical and Veterinary Entomology*, **28** (3), 314–318.
- Salgo, M. P., Telzak, E. E., Currie, B., Perlman, D. C., Litman, N., Levi, M., Nathenson, G., Benach, J. L., Al-Hafidh, R., Casey, J. (1988) A focus of Rocky Mountain spotted fever within New York City. *New England Journal of Medicine*, **318** (21), 1345–1348.
- Santos, H. A., Thomé, S. M. G., Baldani, C. D., Silva, C. B., Peixoto, M. P., Pires, M. S., Vitari, G. LV, Costa, R. L., Santos, T. M., Angelo, I. C., Santos, L. A., Faccini, J. LH, Massard, C. L. (2013) Molecular epidemiology of the emerging zoonosis agent *Anaplasma phagocytophilum* (Foggie, 1949) in dogs and ixodid ticks in Brazil. *Parasites & Vectors*, **6**, 348. <http://www.parasitesandvectors.com/content/6/1/348>
- Sapegina, V. F., Vorontsov, V. A., Telegin, V. I., Ivanova, N. G., Dobrotvorsky, A. K. (1985) The distribution of *Ixodes persulcatus* in a forested area of Novosibirsk. *Parasitology*, **19**, 370–373 [In Russian].
- Savić, S. (2012) Discovering Lyme Disease in Ticks and Dogs in Serbia — Detection and Diagnostic Methods. In: Karami A. eds. *Lyme Disease*, Rijeka, Intech, 95–112.
- Sawickiy, B. P., Efremov, G. A., Karpova, L. I. (2008) Pasture species of ticks in Belarus and the results of the study of their role in human pathology and pets. *Ecology and fauna*, (1), 11–22 [In Russian].
- Sawickiy, B. P., Khandogiy, A. V., Karpenko, L. I. (2007) The experience of studying ticks attacking a man in a forested area in Minsk. *Vestsi BDPU*, (1), 50–54 [In Russian].
- Schein, E., Mehlhorn, H., Voigt, W.P. (1979) Electron microscopical studies on the development of *Babesia canis* (Sporozoa) in the salivary glands of the vector tick *Dermacentor reticulatus*. *Veterinary Parasitology*, **36** (3), 229–241.
- Schicht, S., Junge, S., Schnieder, T., Strube, C. (2011) Prevalence of *Anaplasma phagocytophilum* and coinfection with *Borrelia burgdorferi* sensu lato in the hard tick *Ixodes ricinus* in the city of Hanover (Germany). *Vector Borne Zoonotic Disease*, **11** (12), 1595–1597.
- Schicht, S., Schnieder, T., Strube, C. (2012) *Rickettsia* spp. and coinfections with other pathogenic microorganisms in hard ticks from northern Germany. *Journal of Medical Entomology*, **49** (3), 766–771.
- Schöffel, I., Schein, E., Wittstadt, U., Hentsche, J. (1991) Parasite fauna of red foxes in Berlin (West). *Berliner und Münchener tierärztliche Wochenschrift*, **104**, 153–157.
- Schönberg, A., Camey, C., Kahl, O., Wilske, B., Preac-Mursic, V., Hovind-Hougen, K. (1988) First isolation of *Borrelia burgdorferi*, the agent of Lyme borreliosis, from *I. ricinus* (Acari: Ixodidae) in Berlin (West). *Zentralblatt für Bakteriologie, Mikrobiologie und Hygiene*, **268** (4), 487–494.
- Schorn, S., Pfister, K., Reulen, H., Mahling, M., Manitz, J., Thiel, C., Silaghi, C. (2011) Prevalence of *Anaplasma phagocytophilum* in *I. ricinus* in Bavarian public parks, Germany. *Ticks Tick Borne Disease*, **2** (4), 196–203.
- Schorn, S., Pfister, K., Reulen, H., Mahling, M., Silaghi, C. (2011) Occurrence of *Babesia* spp., *Rickettsia* spp. and *Bartonella* spp. in *I. ricinus* in Bavarian public parks, Germany. *Parasit & Vectors*, **4**, 135. <http://www.parasitesandvectors.com/content/4/1/135>
- Schorn, S., Schöl, H., Pfister, K., Silaghi, C. (2011) First record of *Ixodes frontalis* collected by flagging in Germany. *Ticks Tick Borne Disease*, **2** (4), 228–230.
- Schwartz, B. S., Hofmeister, E., Glass, G. E., Arthur, R. R., Childs, J. E., Cranfield, M. R. (1991) Lyme borreliosis in an inner-city park in Baltimore. *Public Health Journal*, **81**, 803–804.
- Scotarczak, B., Cichocka, F. (2001) Isolation and amplification by polymerase chain reaction dna of *Babesia microti* and *Babesia divergens* in ticks in Poland. *Annals of Agricultural and Environmental Medicine*, **8**, 187–189.
- Segura, F., Pons, I., Miret, J., Pla, J., Ortuño, A., Nogueras, M. M. (2014) The role of cats in the eco-epidemiology of spotted fever group diseases. *Parasit & Vectors*, **7**, 353. <http://www.parasitesandvectors.com/content/7/1/353>
- Segura, F., Pons, I., Miret, J., Pla, J., Ortuño, A., Nogueras, M. M. (2014) The role of cats in the eco-epidemiology of spotted fever group diseases. *Parasites & Vectors*, **7**, 353. <http://www.parasitesandvectors.com/content/7/1/353>
- Semenyshyn, O. B., Biletska, G., Drul, A. S., Fedoruk, V., Shulgan, A., Lozinski, I. M., Kostyuk, L., Velichko, A., Hacyy, L., Vasyunek, L. (2010) Monitoring natural foci of tick-borne transmissible infections in Lviv region. In: Compilation of scientific-practical conference „Modern problems of epidemiology, microbiology and hygiene“. Lviv, 462–467 [in Ukrainian].
- Semenyshyn, O., Biletska, H., Drul, O., Fedoruk, V., Sholomey, M., Shulgan, A., Lozynskiy, I., Kostyuk, L., Velychko, O., Gacyi, L., Vasyunec, L. (2010) Monitoring of natural foci of tick-transmissible infections in Lviv region. In: *Modern problems of epidemiology, microbiology and hygiene*, 462–467.
- Serra-Freire, N. M. (2010) Occurrence of ticks (Acari: Ixodidae) on human hosts, in three municipalities in the State of Pará, Brazil. *Brazilian Journal of Veterinary Parasitology*, **19** (3), 141–147.
- Serra-Freire, N. M., Borsoi, A. B. (2009) Mutagenic occurrence in teleoginae of *Rh. sanguineus* from intradomiciliary environment at Rio de Janeiro city. *Brazilian Journal of Veterinary Parasitology*, **18** (2), 53–56.
- Severinsson, K., Jaenson, T. G., Pettersson, J., Falk, K., Nilsson, K. (2010) Detection and prevalence of *Anaplasma phagocytophilum* and *Rickettsia helvetica* in *I. ricinus* ticks in seven study areas in Sweden. *Parasit & Vectors*, **3**, 66. <http://www.parasitesandvectors.com/content/3/1/66>
- Shadrin, E. G., Nikiforov, O. I., Ivanova M. G. (2011) Changes in the number and distribution of ticks (Ixodidae) on the territory of Yakutia. *The successes of modern biology*, **131** (5), 469–473 [In Russian].
- Shevkoplyas, V. N. (2006) Ticks of the Greater Sochi. In: Int. scientific. Conf. „The fauna, biology, morphology and taxonomy of the parasites“, April 19–21, 308–310 [In Russian].
- Shevkoplyas, V. N. (2009) Monitoring the effectiveness of anti-parasitic activities in the Krasnodar region. *Agrarian Herald Urals*, (2), 67–70 [In Russian].
- Shevkoplyas, V. N., Brudnyi, A. A., Malay, V. I. (2004) Trends in species of ticks in the Krasnodar region. *Trudy the All-Russian Institute of Helminthology*, **5**, 182–187 [In Russian].
- Shaw, S. E., Day, M. J., Birtles, R. J., Breitschwerdt, E. B. (2001) Tick-borne infectious diseases of dogs. *Trends in Parasitology*, **17** (2), 74–80.
- Shimada, Y., Beppu, T., Inokuma, H., Okuda, M., Onishi, T. (2003) Ixodid tick species recovered from domestic dogs in Japan. *Medical and Veterinary Entomology*, **17**, 38–45.

- Siater, M. R., Di Nardo, A., Pediconi, O., Dalla Villa, P., Candeloro, L., Alessandrini, B., Del Papa, S. (2008) Free-roaming dogs and cats in central Italy: Public perceptions of the problem. *Preventive Veterinary Medicine*, **84**, 27–47.
- Silaghi, C., Gilles, J., Höhle, M., Fingerle, V., Just, F. T., Pfister, K. (2008) *Anaplasma phagocytophilum* infection in *Ixodes ricinus*, Bavaria, Germany. *Emerging Infectious Diseases*, **14** (6), 972–974.
- Silaghi, C., Gilles, J., Höhle, M., Pradel, I., Just, F. T., Fingerle, V., Küchenhoff, H., Pfister, K. (2008) Prevalence of spotted fever group rickettsiae in *I. ricinus* (Acari: Ixodidae) in southern Germany. *Journal of Medical Entomology*, **45** (5), 948–955.
- Silaghi, C., Skuballa, J., Thiel, C., Pfister, K., Petney, T., Pfäffle, M., Taraschewski, H., Passos, L. M. (2012) The European hedgehog (*Erinaceus europaeus*): a suitable reservoir for variants of *Anaplasma phagocytophilum*? *Ticks Tick Borne Disease*, (3), 49–54.
- Silaghi, C., Woll, D., Hamel, D., Pfister, K., Mahling, M., Pfeffer, M. (2012) *Babesia* spp. and *Anaplasma phagocytophilum* in questing ticks, ticks parasitizing rodents and the parasitized rodents—analyzing the host-pathogen-vector interface in a metropolitan area. *Parasit & Vectors*, **5**, 191. <http://www.parasitesandvectors.com/content/5/1/191>
- Silaghi, C., Woll, D., Mahling, M., Pfister, K., Pfeffer, M. (2012) Candidatus *Neoehrlichia mikurensis* in rodents in an area with sympatric existence of the hard ticks *Ixodes ricinus* and *Dermacentor reticulatus*, Germany. *Parasites & Vectors*, **5**, 285. <http://www.parasitesandvectors.com/content/5/1/285>
- Silveira, J. A., Passos, L. M., Ribeiro, M. F. (2009) Population dynamics of *Rh. sanguineus* (Latrielle, 1806) in Belo Horizonte, Minas Gerais state, Brazil. *Veterinary Parasitology*, **161** (3–4), 270–275.
- Simões, P. B., Cardoso, L., Araújo, M., Yisaschar-Mekuzas, Y., Baneth, G. (2011) Babesiosis due to the canine *Babesia microti*-like small piroplasm in dogs—first report from Portugal and possible vertical transmission. *Parasites & Vectors*, **4**, 50.
- Simonenko (Nikiforova), O. V. (2000) Fauna and ecology of ticks (Parasitiformes: Ixodidae) Kharkov region. *Veterinary Medicine: Interdepartmental subject scientific collection*, (77) 293–298 [in Russian].
- Simsen, J. A., Palmer, A. T., Fingerle, V., Wilske, B., Kurti, T. J., Munderloh, U. G. (2002) *Rickettsia monacensis* sp nov., a spotted fever group rickettsia, from ticks (*I. ricinus*) collected in a European city park. *Applied and Environmental Microbiology*, **68**, 4559–4566.
- Siński, E., Karbowiak, G., Siuda, K., Buczek, A., Jongejan, F. (1994) *Borrelia burgdorferi* infection of ticks in some regions of Poland. *Przegląd epidemiologiczny*, **48**, 461–465 [in Polish].
- Siński, E., Rijpkema, S. G. (1997) Prevalence of *Borrelia burgdorferi* infection in *I. ricinus* ticks at urban and suburban forest habitats. *Przegląd epidemiologiczny*, **51** (4), 431–435.
- Siroký, P., Kubelová, M., Bednář, M., Modrý, D., Hubálek, Z., Tkadlec, E. (2011) The distribution and spreading pattern of *Dermacentor reticulatus* over its threshold area in the Czech Republic — how much is range of this vector expanding? *Veterinary Parasitology*, **183** (1–2), 130–135.
- Siuda, K., Solarz, K., Deryło, A., Buczek, A., Sadowski, T., Kwiatkowski, S. (1992) Researches on ticks (Acari: Ixodida) Krakow-Czestochowa Upland. The occurrence and abundance of *I. ricinus* (L.) (Ixodidae) in areas varying degrees of altered anthropopressure. *Prádnik Szafer Museum*, (5), 235–248.
- Siukkola, A. (2014) Seasonality of *I. ricinus* and *Ixodes trianguliceps* tick on the bank vole (*Myodes glareolus*) and on vegetation in Central Finland. University of Jyväskylä Department of Biological and Environmental Science Ecology and Evolutionary Biology, 28.
- Sixl, W., Ladurner, G., Stünzner, D., Withalm, H. (1981) Zur Verbreitung der FSME im Stadtgebiet von Graz. In: 3. Internat. Arbeitskolloquium über Naturherde von Infektionskrankheiten in Zentraleuropa, Graz-Seggau, Austria, 83.
- Skachkov, M. V., Yakovlev A. G., Plotnikov, O. A., Mamedov N. M., Nazarenko, S. V., Petrishcheva, G. V. (2007) The role of different types of ticks as vectors of pathogens of tick-borne encephalitis and borreliosis in the Orenburg region. *Medical Parasitology and parasitic diseases*, (3), 27–30 [In Russian].
- Skotarczak, B., Cichocka, A. (2001) Isolation and amplification by polymerase chain reaction DNA of *Babesia microti* and *Babesia divergens* in ticks in Poland. *Annals of Agricultural and Environmental Medicine*, **8** (2), 187–189.
- Skotarczak, B., Rymaszewska, A. (2001) Prevalence of the etiological agent of human ehrlichiosis (HGE) in ticks from west-north Poland. *Wiadomości parazytologiczne*, **47** (1), 95–101.
- Skotarczak, B., Soroka, M., Wodecka, B. (1999) Występowanie *I. ricinus* na wybranych terenach rekreacyjnych województwa szczecińskiego. I. *Wiadomości parazytologiczne*, **45**, 507–517.
- Skotarczak, B., Wodecka, B. (2000) Występowanie *I. ricinus* na wybranych terenach rekreacyjnych województwa szczecińskiego. II. *Wiadomości parazytologiczne*, **46**, 265–272.
- Skotarczak, B., Wodecka, B. (2002) The occurrence of *I. ricinus* in the selected recreative areas in the province of Szczecin. Part III. *Wiadomości parazytologiczne*, **48** (2), 201–206.
- Skuballa, J., Oehme, R., Hartelt, K., Petney, T., Bucher, T., Kimmig, P., Taraschewski, H. (2007) European hedgehogs as hosts for *Borrelia* spp., Germany. *Emerging Infectious Diseases*, **13** (6), 952–953.
- Skuballa, J., Petney, T., Pfäffle, M., Taraschewski, H. (2010) Molecular Detection of *Anaplasma phagocytophilum* in the European hedgehog (*Erinaceus europaeus*) and its Ticks. *Vector-Borne and Zoonotic Diseases*, **10** (10), 1055–1057.
- Skuballa, J., Petney, T., Pfäffle, M., Taraschewski, H., Oehme, R., Hartelt, K., Fingerle, V., Kimmig, P. (2012) Occurrence of different *Borrelia burgdorferi* sensu lato genospecies including *B. afzelii*, *B. bavariensis*, and *B. spielmanii* in hedgehogs (*Erinaceus* spp.) in Europe. *Ticks and Tick-borne Diseases*, **3** (1), 8–13.
- Smith, F. D., Ballantyne, R., Morgan, E. R., Wall, R. (2011) Prevalence, distribution and risk associated with tick infestation of dogs in Great Britain. *Medical and Veterinary Entomology*, **25** (4), 377–384.
- Smith, R. C., Gordon, J. C., Philip, R. N. (1983) Rocky Mountain spotted fever in an urban canine population. *American Veterinary Medical Association*, **183** (12), 1451–1453.
- Smyslova, T. S., Antykova, L. P., Vershinsky, B. V. (1989) Features of the spread of ticks and tick-borne encephalitis foci antropourgichesk in Leningrad. In: *Tick-borne encephalitis*, St. Petersburg, 40–49 [In Russian].
- Soares, A. O., Souza, A. D., Feliciano, E. A., Rodrigues, A. F., D'Agosto, M., Daemon, E. (2006) Evaluation of ectoparasites and hemoparasites in dogs kept in apartments and houses with yards in the city of Juiz de Fora, Minas Gerais, Brazil. *Brazilian Journal of Veterinary Parasitology*, **15** (1), 13–16.
- Someya, A., Ito, R., Maeda, A., Ikenaga, M. (2015) Detection of rickettsial DNA in ticks and wild boars in Kyoto City, Japan. *Journal of Veterinary Medical Science*, **77** (1), 37–43.
- Souza, B. M., Leal, D. C., Barboza, D. C., Uzêda, R. S., De Alcântara, A. C., Ferreira, F., Labruna, M. B. (2010) Prevalence of ehrlichial infection among dogs and ticks in Northeastern Brazil. *Revista Brasileira de Parasitologia Veterinária*, **19** (2), 89–93.
- Spielman, A. (1994) The emergence of Lyme disease and human babesiosis in a changing environment. *Annals of the New York Academy of Sciences*, **740**, 146–156.
- Špitalská, E., Boldiš, V., Derdák, M., Selyemová, D., Rusňáková Taragelová, V. (2014) Rickettsial infection in *I. ricinus* ticks in urban and natural habitats of Slovakia. *Ticks Tick Borne Disease*, **5** (2), 161–165.
- Spolidorio, M. G., Minervino, A. H., Valadas, S. Y., Soares, H. S., Neves, K. A., Labruna, M. B., Ribeiro, M. F., Gennari, S. M. (2013) Serosurvey for tick-borne diseases in dogs from the Eastern Amazon, Brazil. *Brazilian Journal of Veterinary Parasitology*, **22** (2), 214–219.

- Sprong, H., Hofhuis, A., Gassner, F., Takken, W., Jacobs, F., van Vliet, A. J., van Ballegooijen, M., van der Giessen, J., Takumi, K. (2012) Circumstantial evidence for an increase in the total number and activity of borrelia-infected *I. ricinus* in the Netherlands. *Parasites & Vectors*, 5, 294. <http://www.parasitesandvectors.com/content/5/1/294>
- Sroka, J., Wójcik-Fatla, A., Szymańska, J. (2009) The occurrence of *Toxoplasma gondii* and *Borrelia burgdorferi* sensu lato in *I. ricinus* ticks from eastern Poland with the use of pcr. *Annals of Agricultural and Environmental Medicine*, 16 (2), 313–319.
- Stafford, K. C 3rd., Carter, M. L., Magnarelli, L. A., Ertel, S. H., Mshar, P. A. (1998) Temporal correlations between tick abundance and prevalence of ticks infected with *Borrelia burgdorferi* and increasing incidence of Lyme disease. *Journal of Clinical Microbiology*, 36 (5), 1240–1244.
- Stańczak, J., Cieniuch, S., Lass, A., Biernat, B. (2015) Detection and quantification of *Anaplasma phagocytophilum* and *Babesia* spp. in *I. ricinus* ticks from urban and rural environment, northern Poland, by real-time polymerase chain reaction. *Experimental and Applied Acarology*, 66, 63–81.
- Stańczak, J., Gabr, e R. M., Kruminis-Łozowska, W., Racewicz, M., Kubica-Biernat, B. (2004) *I. ricinus* as a vector of *Borrelia burgdorferi* sensu lato, *Anaplasma phagocytophilum* and *Babesia microti* in urban and suburban forests. *Annals of Agricultural and Environmental Medicine*, (11), 109–114.
- Steere, A. C. (1994) Lyme disease: A growing threat to urban populations. *Proceedings of the National Academy of Sciences of the United States of America*, 91, 2378–2383.
- Steere, A. C., Malawista, S. E. (1979) Cases of Lyme disease in the United States: Locations correlated with distribution of *I. scapularis* (dammini). *Annals of Internal Medicine*, 91, 730–733.
- Stefančíková, A., Tresová, G., Pet'ko, B., Skardová, I., Sesztáková, E. (1998) Elisa comparison of three whole-cell antigens of *Borrelia burgdorferi* sensu lato in serological study of dogs from area of Kosice, eastern Slovakia. *Annals of Agricultural and Environmental Medicine*, 5 (1), 25–30.
- Stefanoff, P., Zielicka-Hardy, A., Hlebowicz, M., Konior, R., Lipowski, D., Szenborn, L., Siennicka, J., Orlikova, H. (2013) New endemic foci of tick-borne encephalitis (TBE) identified in districts where testing for TBE was not available before 2009 in Poland. *Parasites & Vectors*, 6, 180. <http://www.parasitesandvectors.com/content/6/1/180>
- Stegny, V. A., Mishaeva, N. (2012) Determination of the main tick-borne pathogens by RT-PCR. In: *Sakharov readings 2012 environmental problems of the XXI century*, Proceedings of the 12th international conference on May 17–18, 2012, Minsk, Belarus Minsk ISEU. Sakharov, 164 [In Russian].
- Stella, E., Sobrero, L. (1978) *Haemaphysalis concinna* Koch, 1844 in Italy. *Parassitologia*, 20 (1–3), 199–204.
- Straube, J. (2011) The Brown Dog tick — dogs' ubiquitous enemy. In: *CVBD symposia Digest*, 12.
- Stekolnikov, A. A., Gaponov, S. P. (2013) Features of the dynamics of small mammals and their ectoparasites in a gradient of urbanization in the Voronezh region. *Ecology of the urbanized territories*, (3), 86–92 [In Russian].
- Stekolnikov, A. A., Gaponov, S. P., Fedorov, S. A., Solodovnikova, O. G. (2012) Rodents and parasitic urbosistemah in the city of Voronezh. *Problems of regional ecology*, (3), 100–105 [In Russian].
- Strube, C., Montenegro, V. M., Epe, C., Eckelt, E., Schnieder, T. (2010) Establishment of a minor groove binder-probe based quantitative real time PCR to detect *Borrelia burgdorferi* sensu lato and differentiation of *Borrelia spielmanii* by ospA-specific conventional PCR. *Parasites & Vectors*, 3, 69. <http://www.parasitesandvectors.com/content/3/1/69>
- Strube, C., Schicht, S., Schnieder, T. (2011) *Borrelia burgdorferi* sensu lato and *Rickettsia* spp. infections in hard ticks (*Ixodes ricinus*) in the region of Hanover (Germany). *Berliner und Münchener tierärztliche Wochenschrift*, 124 (11–12), 512–517.
- Supergan, M., Grytner-Zięcina, B., Karbowiak, G., Hapunik, J. (2008) Rozmieszczenie kleszczy w lasach i parkach aglomeracji warszawskiej. In: Buczek A., Błaszczak Cz, eds. *Stawonogi: Oddziaływanie na żywiciela*. Lublin: Akapit, 63–71.
- Supergan, M., Karbowiak, G. (2009) The estimation scale of endangerment with tick attacks on recreational towns areas. *Przegląd epidemiologiczny*, 63, 67–71.
- Svitáľková, Z., Haruštiaková, D., Mahríková, L., Berthová, L., Slovák, M., Kocianová, E., Kazimírová, M. (2015) *Anaplasma phagocytophilum* prevalence in ticks and rodents in an urban and natural habitat in South-Western Slovakia. *Parasites & Vectors*, 8, 276. doi: 10.1186/s13071-015-0880-8.
- Sytykiewicz, H., Karbowiak, G., Werszko, J., Czerniewicz, P., Sprawka, I., Mitrus, J. (2012) Molecular screening for *Bartonella henselae* and *Borrelia burgdorferi* sensu lato co-existence within *Ixodes ricinus* populations in central and eastern parts of Poland. *Annals of Agricultural and Environmental Medicine*, 19 (3), 451–456.
- Sytykiewicz, H., Karbowiak, G., Chorostowska-Wynimko, J., Szpechciński, A., Supergan-Marwicz, M., Horbowicz, M., Szwed, M., Czerniewicz, P., Sprawka, I. (2015) Coexistence of *Borrelia burgdorferi* s. l. genospecies within *Ixodes ricinus* ticks from central and eastern Poland. *Acta Parasitologica*, 60 (4), 654–661.
- Sytykiewicz, H., Karbowiak, G., Hapunik, J., Szpechciński, A., Supergan-Marwicz, M., Goławska, S., Sprawka, I., Czerniewicz, P. (2012) Molecular evidence of *Anaplasma phagocytophilum* and *Babesia microti* co-infections in *Ixodes ricinus* ticks in central-eastern region of Poland. *Annals of Agricultural and Environmental Medicine*, 19 (1), 45–49.
- Szabó, M. P., Cunha, T. M., Pinter, A., Vicentini, F. (2001) Ticks (Acari: Ixodidae) asso-ciated with domestic dogs in Franca region, São Paulo, Brazil. *Experimental and Applied Acarology*, 25, 909–916.
- Szabó, M. P., de Souza, L. G., Olegário, M. M., Ferreira, F. A., Pajuaba, A. A. (2010) No. Ticks (Acari: Ixodidae) on dogs from Uberlândia, Minas Gerais, Brazil. *Transbound Emergent Disease*, 57 (1–2), 72–74.
- Szabó, M. P., de Souza, LG, Olegário, M. M., Ferreira, F. A., de Albuquerque Pajuaba Neto, A. (2010) Ticks (Acari: Ixodidae) on dogs from Uberlândia, Minas Gerais, Brazil. *Transbound Emerg Disease*, 57 (1–2), 72–74.
- Szabó, M. P., Mangold, A. J., Joao, C. F., Bechara, G. H., Guglielmone, A. A. (2005) Biologicaland DNA evidence of two dissimilar populations of the *Rhipicephalus sanguineustick* group (Acari: Ixodidae) in South America. *Veterinary Parasitology*, 130, 131–140.
- Szabó, M. P., Pinter, A., Labruna, M. B. (2013) Ecology, biology and distribution of spotted-fever tick vectors in Brazil. *Frontiers in Cellular and Infection Microbiology*, V. 3, Article 27. doi: 10.3389/fcimb.2013.00027.
- Szabó, M. P., Rossi, G. F., Cabral, D. D., Martins, M. M., Gerardi, M., Amorim, M. P., Tsuruta, S. A. (2012) Experimental evaluation of birds as disseminators of the cosmopolitan tick *Rhipicephalus sanguineus* (Acari: Ixodidae). *Experimental Parasitology*, 132 (4), 389–393.
- Tagle, I. (1976) *Presencia accidental de Rh. sanguineus en un perro de Santiago de Chile*. Agric. Te'cn. (36), 1–137.
- Takada1, N., Masuzawa, T., Ishiguro, F., Fujita, H., Kudeken, M., Mitani, H., Fukunaga, M., Tsuchiya, K., Yano1, Y., Ma, X. — H. (2001) Lyme Disease *Borrelia* spp. in Ticks and Rodents from Northwestern China. *Applied and Environmental Microbiology*, 67 (11), 5161–5165.
- Tappe, J., Jordan, D., Janecek, E., Fingerle, V., Strube, C. (2014) Revisited: *Borrelia burgdorferi* sensu lato infections in hard ticks (*Ixodes ricinus*) in the city of Hanover (Germany). *Parasites & Vectors*, 7, 441. <http://www.parasitesandvectors.com/content/7/1/441>

- Tappe, J., Strube, C. (2013) *Anaplasma phagocytophilum* and *Rickettsia* spp. infections in hard ticks (*I. ricinus*) in the city of Hanover (Germany): revisited. *Ticks Tick Borne Disease*, **4** (5), 432–438.
- Temichev, A. V. (2014) *Improving control measures during babesiosis of dogs*. PhD thesis. vet. sciences. stavropol state agrarian university. Stavropol, 1–131 [In Russian].
- Temichev, A. V., Lutsuk, S. N., Dyachenko, Y. (2011) Distribution of piroplasmosis in dogs in the city of Armavir. *Bulletin agribusiness Stavropol*, **3** (3), 31–34 [In Russian].
- Thamm, S., Kalko, E. K. V., Wells, K. (2009) Ectoparasite infestations of hedgehogs (*Erinaceus europaeus*) are associated with small-scale landscape structures in an urban–suburban environment. *Eco Health*, **6**, 404–413.
- Tinoco-Gracia, L., Quiroz-Romero, H., Quintero, M. M. T., Renteria-Evangelista, T. B., Barreras-Serrano, A., Hori-Oshima, S., Lopez-Valencia, G., Tamayo-Sosa, A. R., Quezada-Íñiguez, V. A., Moro, M., Vinasco, J. (2007) Seroprevalence of *Ehrlichia canis* in dogs from a Mexico-US border desert region: pilot study. *Journal of Animal and Veterinary Advances*, **6**, 758–760.
- Tinoco-Gracia, L., Quiroz-Romero, H., Quintero, M. M. T., Renteria-Evangelista, T. B., Barreras-Serrano, A., Hori-Oshima, S., Lopez-Valencia, G., Tamayo-Sosa, A. R., Rico, O., Moro, M., Vinasco, J. (2007) Seroprevalence of *Borrelia burgdorferi* in dogs from a Mexico-US border desert region: pilot study. *Journal of Animal and Veterinary Advances*, **6**, 787–789.
- Tinoco-Gracia, L., Quiroz-Romero, H., Quintero-Martínez, M. T., Renteria-Evangelista, T. B., Barreras-Serrano, A., Hori-Oshima, S., Medina-Basulto, G., Vinasco, J., Moro, M. H. (2008) Prevalence and Risk Factors for *Borrelia burgdorferi* Infection in Mexicali, Baja California, a Mexico-US Border City. *International Journal of Applied Research in Veterinary Medicine*, **6** (3), 161–165.
- Tinoco-Gracia, L., Quiroz-Romero, H., Quintero-Martínez, M. T., Renteria-Evangelista, T. B., GonzálezMedina, Y., Barreras-Serrano, A., Hori-Oshima, S., Moro, M. H., Vinasco, J. (2009) Prevalence of *Rhipicephalus sanguineus* ticks on dogs in a region on the Mexico-USA border. *Veterinary Record*, **164**, 59–61.
- Tkachenko, L. V., Naglov, V. A., Grinenko, V. A., Kulshin, V. E. (2005) On the question of learning new natural focal infections in the Kharkiv region. In: *For particularly dangerous infections, biological hazards and counteraction to biological terrorism*. Proceedings of the conference (21–23 September 2005), Illichivsk, 95–96 [In Russian].
- Tkachev, V. A., Tkachev, I. V., Grandma, S. N. (1997) The existence of natural foci of tick-borne encephalitis in the administrative territory of the city of Miass. In: *Woods RB current situation and prospects*. Ufa, 204–205 [In Russian].
- Tohov, Y. M. (2005) Vectors of the virus Crimean-Congo hemorrhagic fever in the Stavropol region. *Medical Parasitology and Parasitic Diseases*, **4**, 32–34 [In Russian].
- Tohov, Y. M., Lutsuk, S. N., Dyachenko, Y. V. (2013) Phenology of the genus *Dermacentor* ticks in central Caucasus. *Parasitology*, **47** (6), 437–447 [In Russian].
- Toledo, A., Jado, I., Olmeda, A. S., Casado-Nistal, M. A., Gil, H., Escudero, R., Anda, P. (2009) Detection of *Coxiella burnetii* in ticks collected from Central Spain. *Vector Borne Zoonotic Disease*, **9** (5), 465–468.
- Toledo, R. S., Tamekuni, K., de Freitas Silva Filho, M., Haydu, V. B., Pacheco, R. C., Labruna, M. B., Dumler, J. S., Vidotto, O. (2011) Study of infection by Rickettsiae of the spotted fever group in humans and ticks in an urban park located in the City of Londrina, State of Paraná, Brazil. *Revista da Sociedade Brasileira de Medicina*, **44** (3), 313–317.
- Toledo, R. S., Tamekuni, K., Filho, M. F., Haydu, V. B., Barbieri, A. R., Hiltel, A. C., Pacheco, R. C., Labruna, M. B., Dumler, J. S., Vidotto, O. (2011) Infection by spotted fever rickettsiae in people, dogs, horses and ticks in Londrina, Parana State, Brazil. *Zoonoses and Public Health*, **58** (6), 416–423.
- Toledo, R. S., Tamekuni, K., Haydu, V. B., Vidotto, O. (2008) Seasonal dynamics of *Amblyomma* ticks (Acari: Ixodidae) in an urban Park of Londrina City, Parana, Brazil. *Brazilian Journal of Veterinary Parasitology*, **17** (1), 50–54.
- Toma, L., Khoury, C., Bianchi, R., Severini, F., Mancini, F., Ciervo, A., Ricci, D., Fausto, A. M., Quarchioni, E., Di Luca, M. (2015) Preliminary investigation on tick fauna in the neighborhood of Tarquinia, Lazio, Italy. *Annali dell'Istituto Superiore di Sanità*, **51** (1), 67–70.
- Tomassone L., Conte V., Parrilla G., De Meneghi D. (2010) Rickettsia infection in dogs and *Rickettsia parkeri* in *Amblyomma tigrinum* ticks, Cochabamba Department, Bolivia. *Vector Borne Zoonotic Disease*, **10** (10), 953–958.
- Townsend, A. K., Ostfeld, R. S., Geher, K. B. (2003) The Effects of Bird Feeders on Lyme Disease Prevalence and Density of *I. scapularis* (dammini) (Acari: Ixodidae) in a Residential Area of Dutchess County, New York. *Journal of medical entomology*, **40** (4), 540–546.
- Tretyakov, K. (2009) Small mammals and their parasites (ixodid ticks) in urban forests and parks of St. Petersburg. *Estonian Journal of Ecology*, **58** (3), 232–239.
- Tretyakov, K. A. (2010) Distribution of ticks on small mammals in St. Petersburg. In: *Theoretical and practical problems of Parasitology*, Moskova, 378–382 [In Russian].
- Tretyakov, K. A. (2013) Species composition, abundance and distribution of ticks (Acari: Ixodidae) on small mammals in St. Petersburg. In: eds. Medvedev, S. G., International Conference „Fundamental and applied aspects of the study of parasitic arthropods in the XXI century“, the memory RAS Corresponding Member Yu. Balashov. Russia, St. Petersburg, 21–25 October 2013, Proceedings of the conference, 148–149 [In Russian].
- Tretyakov, K. A., Medvedev, S. G., Apanaskevich, M. A. (2012) Ixodid ticks in St. Petersburg: a possible threat to public health. *Estonian Journal of Ecology*, **61** (3), 215–224.
- Tringali, G., Intonazzo, V., Perna, A. M., Mansueto, S., Vitale, G., Walker, D. H. (1986) Epidemiology of boutonneuse fever in western Sicily. Distribution and prevalence of spotted fever group rickettsial infection in dog ticks (*Rhipicephalus sanguineus*). *American Journal of Epidemiology*, **123**, 721–727.
- Troger, H., Sixl, W., Stünzner, D., Kock, M., Sixl-Voigt, B., Withalm, H. (1976) Die Verbreitung von *Ixodes hexagonus* in der Steiermark (Österreich). In: *Zentraleuropa*, Graz, 25–28 (2), 475–477.
- Trunov, O. A., Susidko, V., Radomska, F. S. (2012) At the rate of a Lyme borreliosis in Donetsk.. In: Materials of Ukrainian scientific conference infectious disease „Natural foci of infection“ (17–18 May 2012) TDMU Ukrmedknyha Ternopil, 101–103 [In Ukrainian].
- Tsai, Y.-L., Shyu, C.-L., Yao, C.-T., Lin, J. A. (2012) The ixodid ticks collected from dogs and other animals in Taiwan and Kinmen Island. *International Journal of Acarology*, **38** (2), 1–6.
- Tyulkina, E. E., Volkov, S. A. (2012) Investigation of tick-borne encephalitis virus-infected ticks of the Kirov region. In: Proceedings of the 50th anniversary of the International Scientific Student Conference „Student and technological progress“ 13–19 April 2012, Biology Novosibirsk, 118 [In Russian].
- Ugbomoiko, U. S., Ariza, L., Heukelbach, J. (2008) Parasites of importance for human health in Nigerian dogs: high prevalence and limited knowledge of pet owners. *BMC Veterinary Research*, **4**, 49. doi: 10.1186/1746-6148-4-49.
- Ugochukwu, E. I., Nnadozie, C. C. (1985) Ectoparasitic infestation of dogs in Bendel State, Nigeria. *International Journal of Zoonoses*, **12**, 308–312.
- ul-Hasan, M., Abubakar, M., Muhammad, G., Khan, M. N., Hussain, M. (2012) Prevalence of tick infestation (*Rh. sanguineus* and *Hyalomma anatolicum anatolicum*) in dogs in Punjab, Pakistan. *Veterinaria Italiana*, **48** (1), 95–98.
- Uspenschi, I., Chicu, V., Conovalov, Iu., Guțu, A., Melnic, V., Movilă, A., Culibacnăi, E., Gheorgița S. (2003) Cu privire la factorii de formare

- și structura focarelor de zoonotroponoze în condiții urbane. *Epidemiologia, Microbiologia, Parazitologia*, **2B**, 150–152.
- Uspensky, I. (2008) Brown dog tick (or kennel tick) *Rhipicephalus sanguineus* (Latreille) (Acari: Ixodida: Ixodidae). In: Capinera J. L. eds. *Encyclopedia of Entomology*, vol. 1, 2nd ed. Springer, Dordrecht, 577–580.
- Uspensky, I. (2008) Ticks as urban pests and vectors with special emphasis on ticks outside their geographical range. In: Robinson W. H., Bajomi D. eds. *Proceedings of the 6th International Conference on Urban Pests*, OOK-Press Kft, Veszprém, Hungary, 333–347.
- Uspensky, I. (2009) Attachment of nymphal *Rh. sanguineus* (Acari: Ixodidae) to a human in an urban area followed by severe adverse reaction shortly before drop-off. *Folia Parasitologica*, **56** (1), 67–69.
- Uspensky, I. (2014) Conditions of tick (Acari: Ixodoidea) population persistence in the urban environment. In: Müller G., Pospischil R., Robinson W. H. eds. *Proceedings of the Eighth International Conference on Urban Pests*. OOK-Press Kft, Veszprém, Hungary, 203–210.
- Uspensky, I. (2014) Tick pests and vectors (Acari: Ixodoidea) in European towns: Introduction, persistence and management. *Ticks Tick Borne Disease*, **5** (1), 41–47.
- Uspensky, I., Ioffe-Uspensky, I. (2002) The dog factor in brown dog tick *Rhipicephalus sanguineus* (Acari: Ixodidae) infestations in and near human dwellings. *Journal of Medical Microbiology*, **291** (33), 156–163.
- Uspensky, I., Wilamowski, A., Bromley-Schnur, H. (1997) Dermacentor variabilis in Israel. *Vector Ecology Newsletter*, **28** (3), 9–10.
- Uspenskya, I. G. (1971) Influence of cultivation on the territory of the fauna of ticks. In: *The parasites of plants and animals*. Chisinau, (7), 115–121 [In Russian].
- Uspenskya, I. G., Kononov, Yu., Movila, A. A. (2002) Fauna ticks (Acarina, Ixodidae) in urbanotsenoze Chisinau. In: *Proc. rep. XII Congress of Russian Entomological Society*, St. Petersburg, 354 [In Russian].
- Utenkova, E. O., Iastrebov, V. K., Bondarenko, A. L., Oparina, L. V. (2004) Epidemiology of Ixodes tick-borne borreliosis in the north of the Volga-Viatka region. *Meditsinskaia parazitologiya i parazitarnye bolezni*, (2), 7–9 [In Russian].
- Vargas-Hernandez, G., André, M. R., Munhoz, T. D., Faria, J. M., Machado, R. Z., Tinucci-Costa, M. (2012) Molecular characterization of Hepatozoon canis in dogs from Colombia. *Parasitology Research*, **110** (1), 489–92.
- Vatansever, Z., Gargili, A., Aysul, N. S., Sengoz, G., Estrada-Peña A. (2008) Ticks biting humans in the urban area of Istanbul. *Parasitol Research*, **102**, 551–553.
- Venclíková, K., Betášová, L., Sikutová, S., Jedličková, P., Hubálek, Z., Rudolf, I. (2014) Human pathogenic borreliae in Ixodes ricinus ticks in natural and urban ecosystem (Czech Republic). *Acta Parasitologica*, **59** (4), 717–720.
- Venclikova, K., Mendel, J., Betasova, L., Hubalek, Z., Rudolf, I. (2015) First evidence of Babesia venatorum and Babesia capreoli in questing I. ricinus ticks in the Czech Republic. *Annals of Agricultural and Environmental Medicine*, **22** (2), 212–214.
- Venclikova, K., Rudolf, I., Mendel, J., Betasova, L., Hubalek, Z. (2014) Rickettsiae in questing I. ricinus ticks in the Czech Republic. *Ticks Tick Borne Disease*, **5** (2), 135–138.
- Venzal, J. M., Estrada Peña, A., Castro, O., Guglielmone, A. A., Cabrera, P. A., Souza, C. G., Portillo, A., Oteo, J. A. (2007) Study on seasonal activity in dogs and ehrlichial infection in Rh. sanguineus (Latreille, 1806) (Acari: Ixodidae) from southern Uruguay. *Parasitol Latinoam*, **62**, 23–26.
- Venzal, J. M., Guglielmone, A. A., Estrada Peña, A., Cabrera, P. A., Castro, O. (2003) Ticks (Ixodida: Ixodidae) parasitising humans in Uruguay. *Annals of Tropical Medicine and Parasitology*, **97** (7), 769–772.
- Vershinsky, B. V., Antykova, L. P., Maslova, T. S. (1988) Surveillance of natural foci of tick-borne encephalitis in the recreational area of the big city (methodology and results). *Medical Parasitology and parasitic diseases*, (3), 12–17 [In Russian].
- Veselova, N. Y., Sokolov, N. V. (2002) Distribution of piroplasmosis in dogs in the city of Kurgan. In: *Parasitology — Priorities and prospects*, Novosibirsk, 16–20 [In Russian].
- Vichová, B., Halkova, B., Pangracova, L., Stanko, M., Bona, M., Mosansky, L., Pet'ko, B. (2013) Occurrence of ticks (Ixodida) and tick-borne pathogens in urban areas of Kosice city, eastern Slovakia. In: *XII International Jena Symposium on Tick-Borne Diseases*, 143.
- Vichová, B., Miterpáková, M., Iglódyová, A. (2014) Molecular detection of co-infections with Anaplasma phagocytophilum and/or Babesia canis canis in Dirofilaria-positive dogs from Slovakia. *Veterinary Parasitology*, **203** (1–2), 167–172.
- Vieira, R. F., Biondo, A. W., Guimarães, A. M., Santos, A. P., Santos, R. P., Dutra, L. H., Diniz, P. P., de Moraes, H. A., Messick, J. B., Labruna, M. B., Vidotto, O. (2011) Ehrlichiosis in Brazil. *Brazilian Journal of Veterinary Parasitology*, **20** (1), 1–12.
- Vieira, T. S., Vieira, R. F., Finger, M. A., Nascimento, D. A., Sicupira, P. M., Dutra, L. H., Deconto, I., Barros-Filho, I. R., Dornbusch, P. T., Biondo, A. W., Vidotto, O. (2013) Seroepidemiological survey of Theileria equi and Babesia caballi in horses from a rural and from urban areas of Paraná State, southern Brazil. *Ticks Tick Borne Disease*, **4** (6), 537–541.
- Vlasenko, N. M., Filippov, E. G. (1961) The epidemiological characteristics of urban and rural Novosibirsk anthrurgic foci of tick-borne encephalitis. *Proceedings of the Novosibirsk State Medical Institute* (San-Epid. Station), **38**, 5–11 [In Russian].
- von Loewenich, F. D., Baumgarten, B. U., Schröppel, K., Geissdörfer, W., Rölinghoff, M., Bogdan, C. (2003) High diversity of ankA sequences of Anaplasma phagocytophilum among I. ricinus ticks in Germany. *Journal of Clinical Microbiology*, **41**, 5033–5040.
- Voronova, N. V., Gorban, V. V., Luginin, N. S. (2008) The role of mosquitoes and ticks in the transfer of pathogens transmissible diseases in the steppe Dnieper. In: *Proceedings of the IV All-Russian Congress of the Parasitological Society at the Russian Academy of Sciences. Parasitology in the XXI Century — Problems, methods, solutions*, **1**, 133–135 [In Russian].
- Voronova, N. V., Gorban, V. V., Luginin, M. S. (2012) Ecological features Ixodes ticks (Ixodidae) in Zaporizhia region. Zaporozhye State University, 1–242 [In Ukrainian].
- Wan, K., Zhang, Z., Dou, G. (1998) Investigation on primary vectors of Borrelia burgdorferi in China. *Zhonghua Liu Xing Bing Xue Za Zhi*, **19** (5), 263–266 [In Chinese].
- Wang, L., Cao, H., Cui, F. (2013) Surveillance and analysis of severe fever with thrombocytopenia syndrome in Zibo City. *Modern Preventive Medicine*, **40**, 3471–3474 [In Chinese].
- Wegner, Z., Racewicz, M., Kubica-Biernat, B., Kruminis-Łozowska, W., Stańczak, J. (1997) Występowanie kleszczy Ixodes ricinus (Acari, Ixodidae) na zalesionych obszarach Trójmiasta i ich zakażenie krętkami Borrelia burgdorferi. *Przegląd epidemiologiczny*, **51**, 11–20.
- Welc-Faleciak, R., Kowalec, M., Karbowski, G., Bajer, A., Behnke, J. M., Siński, E. (2014) Rickettsiaceae and Anaplasmataceae infections in Ixodes ricinus ticks from urban and natural forested areas of Poland. *Parasites & Vectors*, **7**, 121. <http://www.parasitesandvectors.com/content/7/1/12>
- Wielinga, P. R., Gaasenbeek, C., Fonville, M., de Boer, A., de Vries, A., Dimmers, W., Akkerhuis Op Jagers, G., Schouls, L. M., Borgsteede, F., van der Giessen, J. W. (2006) Longitudinal analysis of tick densities and Borrelia, Anaplasma, and Ehrlichia infections of Ixodes ricinus ticks in different habitat areas in the Netherlands. *Applied and Environmental Microbiology*, **72** (12), 7594–7601.
- Wilamowski, A., Bromley-Schnur, H. J., Ioffe-Uspensky, I., Uspensky, I. (1999) Ticks (Ixodoidea) in Israeli towns. In: Robinson W. H., Retlich F., Rambo G. W. eds. *Proceedings of the 3rd International*

- Conference on Urban Pests, Czech University of Agriculture, Prague, 477–483.
- Willis, D., Carter, R., Murdock, C., Blair, B. (2012) Relationship between habitat type, fire frequency, and *Amblyomma americanum* populations in east-central Alabama. *Journal of Vector Ecology*, **37** (2), 373–381.
- Wodecka, B., Rymaszewska, A., Skotarczak, B. (2014) Host and pathogen DNA identification in blood meals of nymphal *Ixodes ricinus* ticks from forest parks and rural forests of Poland. *Experimental and Applied Acarology*, **62** (4), 543–555.
- Wójcik-Fatla, A., Cisak, E., Chmielewska-Badora, J. (2006) Prevalence of *Babesia microti* in *Ixodes ricinus* ticks from Lublin region (eastern Poland). *Annals of Agricultural and Environmental Medicine*, **13**, 319–322.
- Wójcik-Fatla, A., Cisak, E., Zajac, V., Sroka, J., Sawczyn, A., Dutkiewicz, J. (2013) Study on tick-borne rickettsiae in eastern Poland. I. Prevalence in *Dermacentor reticulatus* (Acari: Amblyomidae). *Annals of Agricultural and Environmental Medicine*, **20** (2), 276–279.
- Wright, J. C., Chambers, M., Mullen, G. R., Swango, L. J., D'Andrea, G. H., Boyce, A. J. (1997) Seroprevalence of *Borrelia burgdorferi* in dogs in Alabama, USA. *Preventive Veterinary Medicine*, **31** (1–2), 127–131.
- Wu, X. B., Na, R. H., Wei, S. S., Zhu, J. S., Peng, H. J. (2013) Distribution of tick-borne diseases in China. *Parasites & Vectors*, **6**, 119. <http://www.parasitesandvectors.com/content/6/1/119>
- Wu, Y. M., Zhang, Z. Q., Wang, H. J., Yang, Q., Feng, L., Wang, J. W. (2008) Investigation on the epidemiology of Far-East tick-borne spotted fever in the Northeastern area of China. *Zhonghua Liu Xing Bing Xue Za Zhi*, **29** (12), 1173–1175 [In Chinese].
- Xiaa, H., Lib, P., Yanga, J., Pana, L., Zhaoa, J., Wangc, Z., Lic, Y., Zhoud, H., Dongd, Y., Guoe, S., Tanga, S., Zhanga, Z., Fana, Z., Hua, Z., Koua, Z., Lia, T. (2008) Epidemiological survey of Crimean-Congo hemorrhagic fever virus in Yunnan, China. *International Journal of Infectious Diseases*, **15** (7), 459–463.
- Xie, L. C., Wan, K. L., Guo, Y., Xu, S., Zhang, Z. F., Pan, L. X., Chen, S. B. (2009) Study of the natural foci of Lyme disease in the City of Meizhou, Guangdong Province. *Journal of Pathogen Biology*, **4** (8), 575–578.
- Yabsley, M. J. (2010) Natural history of *Ehrlichia chaffeensis*: vertebrate hosts and tick vectors from the United States and evidence for endemic transmission in other countries. *Veterinary Parasitology*, **167** (2–4), 136–148.
- Yoak, A. J., Reece, J. F., Gehrt, S. D., Hamilton, I. M. (2014) Disease control through fertility control: Secondary benefits of animal birth control in Indian street dogs. *Preventive Veterinary Medicine*, **113** (1), 152–156.
- Yoshii, K., Okamoto, N., Nakao, R., Hofstetter, R. K., Yabu, T., Masumoto, H., Someya, A., Kariwa, H., Maeda, A. (2015) Isolation of the Thogoto virus from a *Haemaphysalis longicornis* in Kyoto city, Japan. *Journal of General Virology*, May 8. pii: vir. 0.000177.
- Young, F. N., Goff, C. C. (1939) An annotated list of the arthropods found in the burrows of the Florida gopher tortoise, *Gopherus polyphemus* (Daudin). *The Florida Entomologist*, **22** (4), 53–62.
- Zabashita, M. V., Moskvitina, E. A., Pichurina, N. L., Lomov, Yu., Minoransky, V. A., Aydinov, G. V., Orechov, I. V., Vodyanitskaya, S. Y., Adamenko, V. I., Zabashita, A. V., Schwager, M. M., Ryzhkov, V. Y., Govorukhin, M. V., Yemelyanov, Z. N., Kormilenko, I. V., Nenadskaya, S. A., Fedoruk, S. I. (2006) Ecological and epidemiological aspects of West Nile fever in the Rostov region. *Problems especially dangerous infections*, **92** (2), 25–27 [In Russian].
- Zaharchuk, A. V. (2005) Seasonal dynamics of *Ixodes ricinus* L., ticks parasitizing on small mammals in Minsk and its suburbs, Belarus. *Bulletin of the Scandinavian-Baltic Society*, **14**, 163.
- Zaichenko, I. V., Zaichenko, V. I., Orobets, V. A. (2010) Babesiosis of dogs in the city of Pyatigorsk. *Russian parasitological magazine*, (3), 64–66 [In Russian].
- Zaitsev, A. N., Boyko, V. A., Belyaev, A. N. (2000) Zooparazitokompleksy plantations small mammals subjected to varying degrees of anthropogenic transformation. In: *Matererialy IV Republican scientific conference*, Kazan, 47–48 [In Russian].
- Zajac, V., Wójcik-Fatla, A., Cisak, E., Sroka, J., Sawczyn, A., Dutkiewicz, J. (2013) Study on tick-borne rickettsiae in eastern Poland. II. Serological response of the occupationally exposed populations. *Annals of Agricultural and Environmental Medicine*, **20** (2), 280–282.
- Zakharov, A. V. (2001) Regional pathology encephalitis in Ishim area. In: *Proceedings of the International scientific conference of young scientists*, Ishim, 65–67 [In Russian].
- Zakkyeh, T., Mohammad, Ali O., Nasibeh, H. V., Mohammad Reza, Y. E., Farhang, B., Fatemeh, M. (2012) First molecular detection of *Theileria ovis* in *Rhipicephalus sanguineus* tick in Iran. *Asian Pacific Journal of Tropical Medicine*, **5** (1), 29–32.
- Žákovská, A. (2000) Seasonal distribution of borreliae in *I. ricinus* ticks in Brno park Pisarky. *Journal of the Faculty of Science, Masaryk University, Brno*, **26**, 33–42.
- Žákovská, A., Kučerová, H., Nejezchlebová, H., Bartoňková, N., Rašová, T., Norek, A. (2011) Monitoring the prevalence of pathogenic *Borrelia burgdorferi* sensu lato in ticks in two Brno locations. *Klin Mikrobiol Infekc Lek*, **17** (5), 179–183.
- Žákovská, A., Nejezchlebová, H., Bartoňková, N., Rašová, T., Kučerová, H., Norek, A., Ovesná, P. (2013) Activity of the tick *Ixodes ricinus* monitored in a suburban park in Brno, Czech Republic, in association with the evaluation of selected repellents. *Journal of Vector Ecology*, **38** (2), 295–300.
- Žákovská, A., Netušil, J., Martiníková, H. (2007) Influence of environmental factors on the occurrence of *Ixodes ricinus* ticks in the urban locality of Brno-Pisárky, Czech Republic. *Journal of Vector Ecology*, **32** (1), 29–33.
- Žákovská, A., Vostal, K., Martiníková, H. (2008) A longitudinal study of the prevalence of borreliae in ticks in the urban locality of Brno-Pisárky, Czech Republic. *Journal of Vector Ecology*, **33** (2), 385–388.
- Žákovská, A. (2000) Monitoring the presence of borreliae in *Ixodes ricinus* ticks in Brno park Pisarky, Czech Republic. *Biologia*, **55**, 661–666.
- Zavoloka, A. A., Zavoloka, A. V. (2010) Analysis of the manifestations of Lyme disease in the Kharkiv region. *Ukraine. Kharkiv Zoo. Collection of scientific articles*, **5**, 357–361 [In Russian].
- Zeimes, C. B., Olsson, G. E., Hjertqvist, M., Vanwambeke, S. O. (2014) Shaping zoonosis risk: landscape ecology vs. landscape attractiveness for people, the case of tick-borne encephalitis in Sweden. *Parasites & Vectors*, **7**, 370.
- Zeman, P., Benes, C. (2014) Peri-urbanisation, counter-urbanisation, and an extension of residential exposure to ticks: A clue to the trends in Lyme borreliosis incidence in the Czech Republic? *Ticks Tick Borne Disease*, **5** (6), 907–916.
- Zhang, J. Z., Fan, M. Y., Bi, D. Z., Cui, W. F., Han, Y. F. (1996) Genotypic identification of three new strains of spotted fever group rickettsiae isolated in China. *Acta Virologica*, **40** (4), 215–219.
- Zhang, L., Liu, H., Xu, B., Lu, Q., Li, L., Chang, L., Zhang, X., Fan, D., Li, G., Jin, Y., Cui, F., Shi, Y., Li, W., Xu, J., Yu, X. J. (2012) *Anaplasma phagocytophilum* infection in domestic animals in ten provinces/cities of China. *American Journal of Tropical Medicine and Hygiene*, **87** (1), 185–189.
- Zhang, L., Liu, H., Xu, B., Zhang, Z., Jin, Y., Li, W., Lu, Q., Li, L., Chang, L., Zhang, X., Fan, D., Cao, M., Bao, M., Zhang, Y., Guan, Z., Cheng, X., Tian, L., Wang, S., Yu, H., Yu, Q., Wang, Y., Zhang, Y., Tang, X., Yin, J., Lao, S., Wu, B., Li, J., Li, W., Xu, Q., Shi, Y., Huang, F. (2014) Rural residents in China are at increased risk of exposure to tick-borne pathogens *Anaplasma phagocytophilum* and *Ehrlichia chaffeensis*. *BioMed Research International*, Article ID 313867. <http://dx.doi.org/10.1155/2014/313867>.

- Zhang, Y. Z., Zhou, D. J., Qin, X. C., Tian, J. H., Xiong, Y., Wang, J. B., Chen, X. P., Gao, D. Y., He, Y. W., Jin, D., Sun, Q., Guo, W. P., Wang, W., Yu, B., Li, J., Dai, Y. A., Li, W., Peng, J. S., Zhang, G. B., Zhang, S., Chen, X. M., Wang, Y., Li, M. H., Lu, X., Ye, C., de Jong, M. D., Xu, J. (2012) The ecology, genetic diversity, and phylogeny of Huaiyangshan virus in China. *Journal of Virology*, **86** (5), 2864–2868.
- Zinsser, H., Castaneda, M. R. (1931) Studies on typhus fever: VIII. Ticks as a possible vector of the disease from animals to man. *Journal of Experimental Medicine*, **54** (1), 11–21.
- Zlobin, V. I. Gorin, O. Z. (1996) *Tick-borne encephalitis. Etiology, epidemiology and prevention in Siberia*. Novosibirsk, Science, 99–136 [In Russian].
- Zumpt, F. (1944) Die Hundezecke in Deutschland. *Desinfekt Schädlingbekämpfung*, **36**, 7–9 [In German].
- Zygner, W., Gorski, P. & Wedrychowicz, H. (2009) Detection of the DNA of *Borrelia afzelii*, *Anaplasma phagocytophilum* and *Babesia canis* in blood samples from dogs in Warsaw. *Veterinary Record*, **164**, 465–467.
- Zygner, W., Jaros, S., Wedrychowicz, H. (2008) Prevalence of *Babesia canis*, *Borrelia afzelii*, and *Anaplasma phagocytophilum* infection in hard ticks removed from dogs in Warsaw (central Poland). *Veterinary Parasitology*, **153** (1–2), 139–142.
- Žygutienė, M., Alekseev, A., Dubinina, H., Kazlauskienė, R. (2008) Evidence for a risk of tick-borne infection in the city parks of Vilnius, Lithuania. *Ekologija*, **54** (1), 40–43.